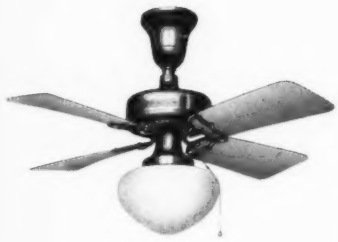
JUNE, 1938

ELECTRICAL SOUTH



THE Robert E. Lee Hotel in Winston-Salem is headquarters for North Carolina social and commercial activities. Their roofgarden is among America's most attractive.

HUNTER newest type 36" ceiling fans have been adopted by the management as standard equipment throughout the building.

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DETROIT CLEVELAND ATLANTA
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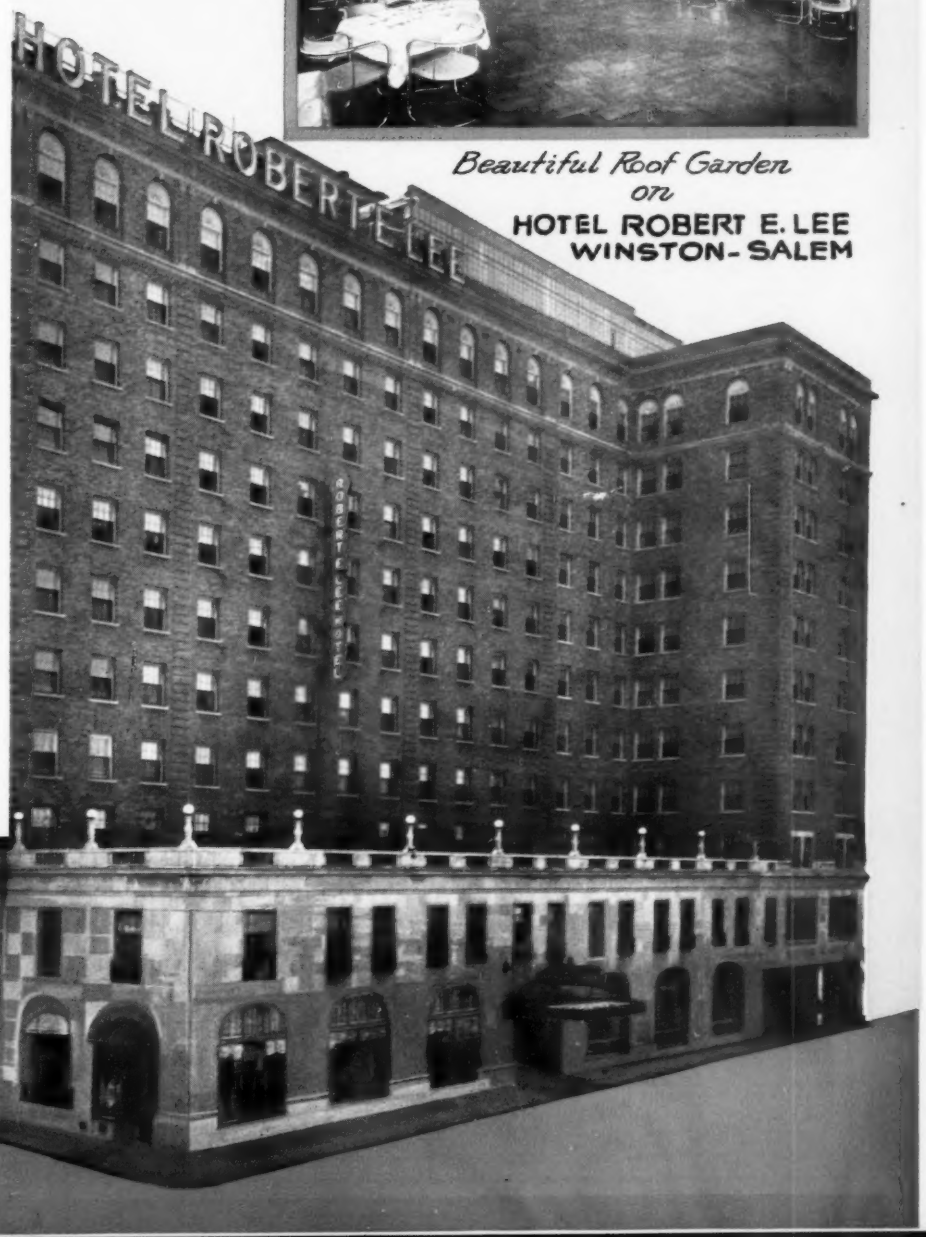
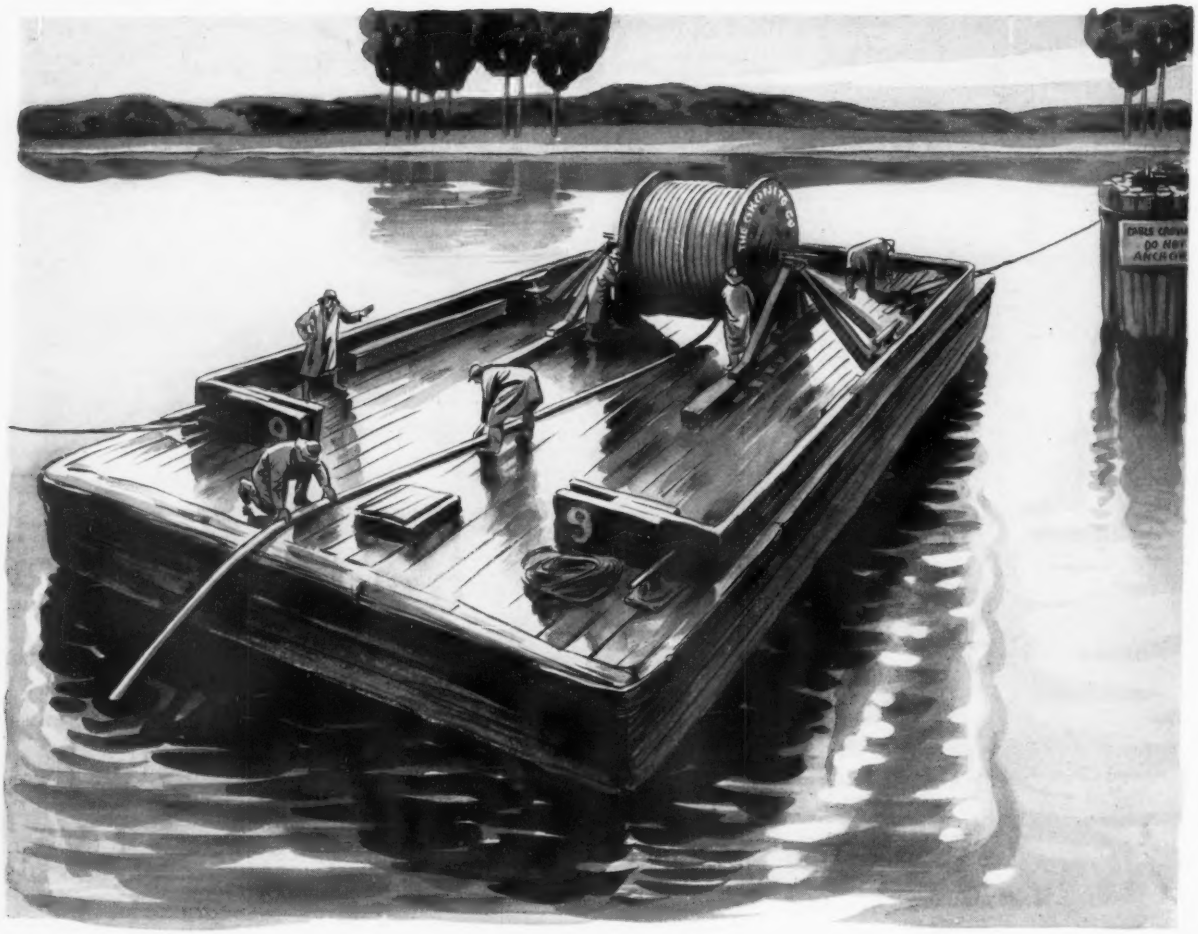
Beautiful Roof Garden on
HOTEL ROBERT E. LEE
WINSTON-SALEM



HUNTER Century



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IN its specialized manufacturing experience of sixty years, The Okonite Company has made a large number and variety of rubber-insulated submarine cables. These cables cover all power voltages up to 35 kv. Installed under every condition of use, many of them have a background of very long service and have established a remarkable **performance* record.

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Founded 1878

EXECUTIVE OFFICE: PASSAIC, NEW JERSEY

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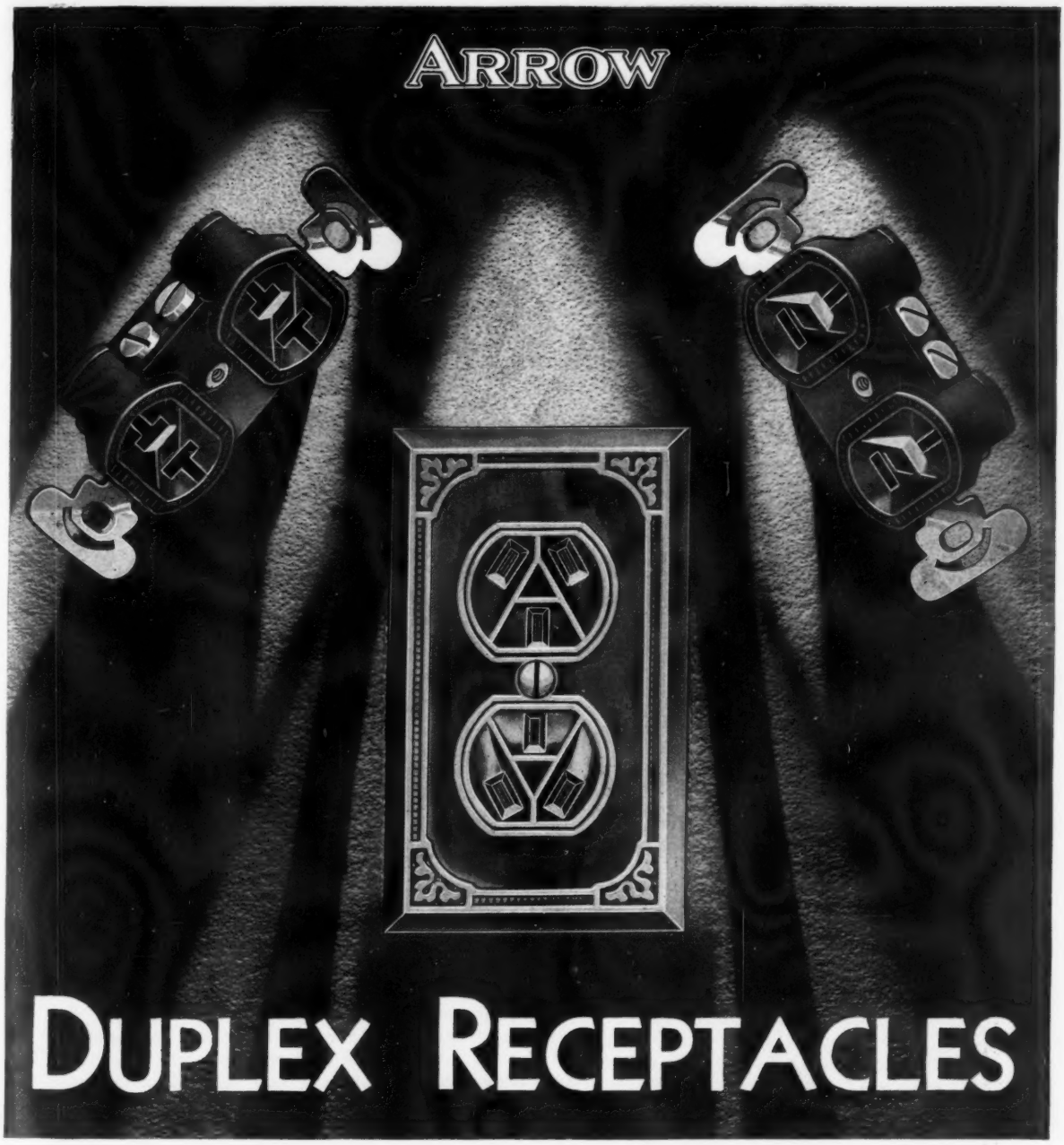
OKONITE QUALITY CANNOT BE WRITTEN INTO A SPECIFICATION



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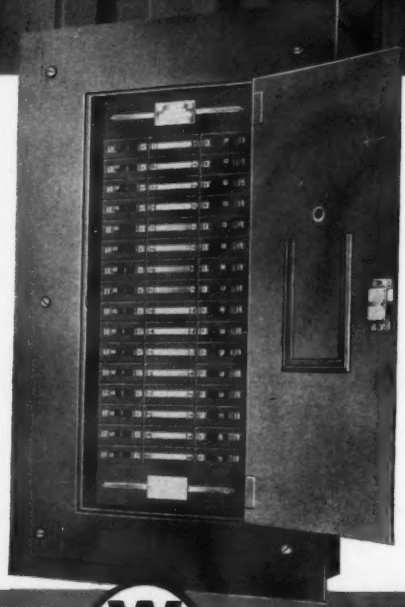

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Power sales engineers who contact industrial users will be interested in a new booklet, "Proved in Over 2½ Million Circuits," giving the facts about Nofuze circuit protection. Copies are now available for the asking. Ask your nearest Westinghouse sales office or wholesaler.

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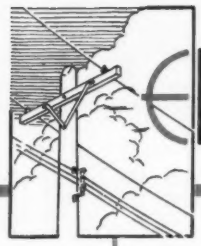
NOFUZE CIRCUIT PROTECTION

JUNE, 1938

Volume 18 No. 6



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All set to go! . . . G-E READY TO LAUNCH BIGGEST PROMOTIONAL CAMPAIGN IN LIGHTING HISTORY

Light Conditioning is theme for concentrated fall activity on Better Light-Better Sight

IN the interests of further developing the principle of Better Light-Better Sight, General Electric plans the biggest concentrated promotional campaign ever staged during the fall lighting season.

Plans for this activity have already been perfected. Tying in with the theme "Light Conditioning" is an entirely new plan developed by General Electric for enlisting retail lamp dealers in the program. This embraces the creation of "light conditioning dealers" who will be able to recommend the right size lamp bulb for every lighting need . . . and so offer a light conditioning service.

These light conditioning dealers will be developed from enterprising G-E lamp agents who will be given a special course of training to qualify them as light conditioning specialists. In addition, they will be supplied with special information, materials, and adequate lamp stocks to enable them to offer a light conditioning service. Supporting this lighting program will be a concentrated magazine advertising campaign including nine full pages . . . a page a week . . . in the *Saturday Evening Post.* Seven full pages in *Collier's.* And six full pages in *Liberty.* These ads will all appear within a sixty days' period, beginning September 15th and running through November 15th.

Co-ordinated newspaper advertising also planned

In addition, there will be concentrated newspaper advertising campaigns in many of the major cities of the country to coordinate with utilities' own fall lighting campaigns.

This light conditioning dealer program plus the magazine and newspaper advertising campaigns will reach more people with lamp and lighting messages during the important fall lighting season than ever before in so concentrated a period.

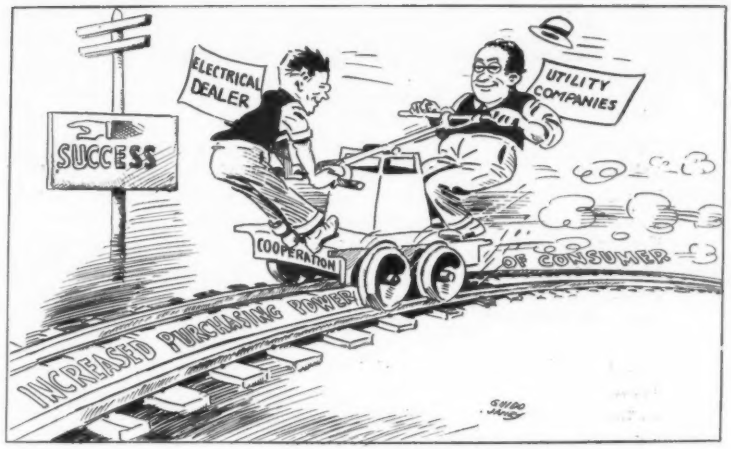
. . .

Complete plans, information, advertising mats, and a wealth of material for tying in with and promoting the idea of light conditioning for Better Light-Better Sight this fall are available to utilities. For further information, write your nearest General Electric lamp division office.

GENERAL ELECTRIC

INCANDESCENT LAMP DEPARTMENT, NELA PARK, CLEVELAND, OHIO

Dealer-utility cooperative merchandising programs are no longer in the experimental stage. A survey of methods and activities indicates that most programs are producing effective results . . . . .



Cooperative Merchandising — Trends and Results

IN FEW activities of the light and power companies do methods and policies cover a wider range than those effective in the various dealer-utility cooperative merchandising programs.

Nearly every company in the South offers a cooperative plan of some kind. In a few instances, these plans have been well described as "lip service" while in other extreme instances "cooperation" consists not only of organized selling campaigns, cooperative advertising, and dealer services such as sales training courses, but actual cash concessions or sales subsidies such as the cost of appliance installation, financing and servicing; or even direct subsidies in the form of bonus payments to dealers and their salesmen.

Diverse as they are in nature, these cooperative plans are accomplishing results—results of different degree, of course, depending upon local conditions.

In most instances, the effect of successfully operated dealer-utility cooperative sales plans has not been merely to shift the merchandise sales of the utilities to local dealers but rather to increase the total volume of sales.

Perhaps the best example of such an increase is that described by S. P. Vecker of the Carolina Power & Light Co., Raleigh, in a following article. Total merchandise sales of utility and dealers in the territory served by that company increased 249 per cent during the three year period, 1935-1937, following the initiation of a comprehensive dealer-utility cooperative program.

Dealers Get Larger Share

As shown in one of the accompanying tables, the 1937 merchandise sales of independent dealers, department stores, furniture stores, and all other outlets other than light and power companies, represented 79.1 per cent of total appliance sales in the territory served by 46 major light and power companies in the South. (In compiling this table the sales of both utilities and cooperating dealers in cases where the utility operated in two states were placed in the state in which the largest volume of business was obtained by the utility, unless sales were submitted by states.)

Considerable difficulty would be entailed in the preparation of a hypothetical cooperative plan representing the average practice of these 46 companies since practically no two plans are identical. However, there are certain trends which are particularly noticeable.

Almost all of the companies surveyed sell some appliance merchandise. Of the 46 plans studied, only six companies sell no electrical appliances at all. Two of these operate in the state of Okahoma where the legislature enacted several years ago a law forbidding appliance sales by utility companies. Two more have only recently abandoned the practice of direct merchandising: one on January 1, 1938 and the other on May 1, 1938.

Of the other 40 companies, the majority sell nearly all appliances although in an increasing number of instances, the sales of these companies are being directed to a great extent to customers in the lower income brackets. Also, there is a noticeable tendency toward placing principal sales emphasis on those appliances still lacking complete public acceptance.

In this connection, it is interesting to note that whereas the electric range was considered an appliance requiring considerable pioneering and sales development effort as recently as three or four years ago, dealer sales of this appliance have been rapidly increas-

Electrical Appliance Sales In Southern States—1937

State	Power Company Sales:	Dealer Sales:	Total Sales:
Alabama	$1,768,743	$5,456,959	$7,225,702
Arkansas	629,457	1,648,389	2,277,846
Florida	1,258,864	6,688,606	7,947,470
Georgia	3,573,217	3,335,000	6,908,217
Kentucky	789,542	4,299,000	5,088,542
Louisiana	1,422,049	5,490,161	6,912,210
Mississippi	747,293	2,237,051	2,984,344
North Carolina	2,999,825	8,269,000	11,268,825
Oklahoma	0	8,096,860	8,096,860
South Carolina	545,235	692,000	1,237,235
Tennessee	2,370,814	7,855,224	10,226,038
Texas	4,905,909	22,929,000	27,834,909
Virginia	1,275,864	7,760,000	9,035,864
West Virginia	922,760	3,000,000	3,922,760
Total	$23,209,572	$87,757,250	$110,966,822

(Based on reports from 46 major light and power companies.)

ing and represented 41.6 per cent of total sales in 1937. A comparison of dealer range sales with the number sold by utilities is given in an accompanying tabulation by states for the year 1937.

Refrigerators passed out of this development stage several years ago and the majority of sales in the territory served by most of the 46 companies are closed by dealers. On the other hand, the majority of water heater sales are made by the utilities in most of the areas surveyed. Although the largest number of washer sales are made by dealers, utilities still sell a large proportion of ironers.

Salesmen's Compensation

Another noticeable trend is to be observed in the method of remunerating utility appliance salesmen. A large number of companies have eliminated commissions entirely as a means of remunerating appliance salesmen. In several instances these men receive straight salaries while in some cases they receive a small salary supplemented by a bonus which varies with the domestic energy sales in the specific territory to which they are assigned. In a few instances, utility appliance salesmen work on a commission basis but receive commissions on all appliances sold in the territory to which they are assigned whether sold by the utility or an independent dealer.

No single feature of utility-dealer cooperative plans has accomplished as much in improving dealer-utility relations as the elimination of commission-paid utility salesmen. Almost invariably, in discussing the subject of cooperative merchandising with dealers, one hears variations of this theme, "We appreciate the attitude of the utility and believe that they can help us sell more appliances to their customers but their salesmen must make a living and we find that they are ruthless in their competition. They take every advantage possible."

Whether such remarks are justified, of course, depends upon local conditions but a much more friendly relation is found to exist between dealers and utilities in those territories where commission salesmen have been eliminated by the utility. It may be significant that some of the best records in increased appliance sales have been achieved by those companies adopting salesmen's remuneration plans not based on the individual salesman's sales alone.

Another complaint which many dealers offer in discussing their sales problems is that the utility enjoys an unfair advantage by their ability to collect appliance payments along with a customer's electric bill. While the actual advantage enjoyed by the utility in this respect is subject to debate, several companies have eliminated dealer complaint by giving them the same privilege.

Many features of utility-dealer cooperative merchandising plans which were considered novel a short time ago have received such wide acceptance that they represent general practice today.

For example, a large majority of the companies employ dealer activity supervisors, usually designated as "dealer coordinators." These men coordinate the sales promotion and advertising efforts of the utility with those of the allied dealers. They are usually well trained in the art of merchandising and are available to dealers for assistance in sales training, sales planning, and frequently render assistance in improving displays, advertising, etc.

Almost every company operates a home service department of some kind and the services of employees in this department usually are made available for follow-up and service calls on purchasers of appliances sold by dealers as well as those sold by the utility.

Many companies operating in rural territory have added a farm sales staff who devote their entire attention to the development of increased usage among thousands of farm customers thus opening further sales opportunities for electrical dealers.

Changes in Advertising

With few exceptions, the dealer-utility cooperative merchandising plans now in effect include advertising programs of an educational and promotional nature. Most companies have discontinued the advertising of any particular product but, instead, advertise the value of and economy of the different services. Some companies include the names of all allied dealers in their copy while others merely carry a phrase such as "Buy From Your Dealer."

Many appliance dealers have commented particularly upon the value to them of a well planned utility promotional advertising program scheduled well in advance, thus permitting them to tie-in with their own advertising at the proper time. Knowing the utility's plan for the entire year, the dealer can plan to use his own appropriation so as to receive maximum benefits.

A number of companies have only recently revised their advertising methods to eliminate entirely, or greatly reduce the amount of, specific product advertising in favor of promotional copy. It is

surprising to learn how much effect this single change has had upon sales volume. One merchandising and advertising manager, associated with one of the largest southern companies, writes as follows:

"During 1937 two-thirds of our newspaper advertising space was devoted to purely promotional advertising, without mentioning the brand of appliance or the terms offered by us. Probably nine-tenths of the radio time* we used over seven stations was devoted to purely promotional advertising in which the convenience, comfort, economy and other advantages of electrical appliances were emphasized.

"A recent check-up with dealers indicates that their sales of ranges, water heaters, refrigerators and other appliances during 1937 were markedly higher than during the previous year, and that they give credit to our promotional campaign for a considerable measure of this increase."

Range Sales In Southern States—1937

(Based on reports from 46 major light and power companies.)

State:	By Power Companies:	By Dealers:	Total Number Sold, 1937:	On Lines as of Jan. 1938:
Alabama	4,094	2,252	6,346	26,939
Arkansas	269	76	345	* 345
Florida	2,421	7,045	9,466	46,365
Georgia	6,884	1,598	8,482	38,615
Kentucky	1,371	683	2,054	9,585
Louisiana	871	223	1,094	6,666
Mississippi	853	357	1,210	6,901
North Carolina	4,976	3,848	8,824	43,512
Oklahoma	0	387	387	3,312
South Carolina	580	422	1,002	4,700
Tennessee	4,147	4,366	8,513	37,800
Texas	4,287	760	5,047	30,537
Virginia	4,357	3,111	7,468	39,139
West Virginia	181	50	231	* 1,581
Total	35,291	25,178	60,469	295,997

*Figures Incomplete.

Prospect Lists Supplied

Another valuable service which nearly all utilities are maintaining for cooperating dealers is that of supplying prospect lists. Many different plans, of varying scope, are in effect. Some companies obtain prospects through special promotions, displays and contests; and then distribute names among dealers. Others supply dealers with lists of low-use customers on the assumption that customers using less than 20 or 30 kilowatt hours per month do not have electrical refrigeration or other major appliances.

Perhaps the most elaborate plan of supplying dealers with prospects is that offered by Arkansas Power and Light Co. A survey of every domestic and commercial customer has just been completed by personal canvass. The survey provides name, address, kind of appliances in use, and the date each was purchased. In addition, the survey provides any other data available such as names of appliances which the prospect could use advantageously, etc.

The survey data was compiled by towns and trade territories, and copies have been made available to all cooperating dealers. They constitute the most complete lists of prospects ever compiled and provide valuable saturation data which will guide the dealers in their purchases.

Dealers Enthusiastic

That the survey has been well received by the dealers is indicated by the many voluntary letters received from all over the territory. One of the largest appliance dealers in the state wrote:

"This is the most outstanding thing ever done for the electric appliance dealers in the state. I think that you are going way out ahead of the whole industry and deserve the whole-hearted support of every dealer in the state."

In the same mail was another letter from a dealer who asserted:

(*Continued on page* 51)

Electrical Refrigerator Sales

(Household Models Only)

State	1934	1935	1936	1937
Alabama	16,914	24,528	23,460	25,855
Arkansas	9,350	10,352	11,907	12,798
Florida	17,591	28,584	31,145	32,683
Georgia	29,363	29,707	34,072	38,428
Kentucky	19,865	18,634	27,714	31,055
Louisiana	10,008	15,672	20,607	23,231
Maryland	25,770	22,853	23,284	29,832
Mississippi	5,182	7,398	11,389	11,606
North Carolina	20,883	26,710	37,612	47,629
Oklahoma	17,900	17,890	20,809	23,123
South Carolina	9,910	13,616	18,334	22,549
Tennessee	26,822	26,158	32,018	36,301
Texas	53,078	66,324	83,088	94,875
Virginia	22,821	23,599	32,351	36,517
West Virginia	18,170	16,574	25,018	28,293
Total	303,627	348,599	432,808	494,775

*Figures based on Report issued by the National Electrical Manufacturers Association.

Cooperative Merchandising – The Utility Viewpoint

By S. P. Vecker

General Sales Manager
Carolina Power & Light Company

MANY of us remember the early propounders of dealer-utility cooperation and perhaps recall the skepticism with with we looked upon such a doctrine. We were faced with the necessity of paying higher taxes and selling electric service at lower rates—while all other commodities were increasing in price; and, mind you, while these things were taking place, economic conditions in general became even more uncertain, forcing us to seek some plan of relief.

The slogan "Sell Your Way Out of the Depression" which had been used by other industries with marked success, could be adopted by the utilities provided the cost of mass selling to the mass market was not beyond their solvent strength.

While I speak as a representative of a utility whose operations are limited in scope as compared with those of many companies, it safely may be said, regardless of the size or geographic location, we are confronted with a common requirement of selling more electric service at the minimum cost to more customers. Assuming this to be true, it may be stated further that economics of sound utility operations exist only if in the sale of more electric service at the minimum cost to the consumer, it is also accomplished at the minimum cost to the utility.

Mass Selling Required

Despite the claims made by adroit government theorists that rate reductions alone will solve our problem, a careful survey of past experience proves definitely that increased kilowatt hour sales may be secured only through selling increased use. Regardless of the cheapness of cost of electric service, kilowatt hour gains will not come without the customer's first having purchased the required electrical equipment. Since this calls for a capital investment by the customer, the important step in the solution of this problem lies in coordinated selling . . . selling electrical merchandise on a larger scale than ever before . . . selling electrical merchandise to a greater percentage of customers . . . in fact, mass selling to a mass market so that the low-use customers as well as the larger domestic users will be included in this sales objective.

Advertising — no matter how skillfully prepared — will not do this job; and the cleverest sales promotion methods are inadequate to the task. Mass selling is a matter of mass man power; it is knocking on more doors by more men, well-trained salesmen who create use by placing more electric merchandise in the homes. It is the constant pounding away at customer sales resistance through continuous customer contact by salesmen backed by never-ending educational sales promotion work—through advertisements, displays, radio, direct-mail, and other media that enable us to reach our objective of selling more and more electric service.

With rare exceptions, every utility has, heretofore, depended entirely upon its own sales organization to sell and to supply the needs of electrical appliances, and the policies and the methods were so designed as to carry out such plans because of:

1. The then existing need to pioneer new equipment and develop its public acceptance, and

2. The need of proving to dealer outlets that a mass market—with its mass profits—did exist for them.

However, previous records revealed that increased use each year was too limited in volume to absorb the losses in revenue which would inevitably accrue as a result of drastic rate reductions. Again, the solution to the problem pointed to mass selling to the mass market.

In order to determine whether or not mass selling to the mass market is economically feasible when using a single-handed method—that is, merchandising through the efforts of the utility's own sales force alone—these eight questions must first be answered:

1. Are the leading appliance manufacturers and distributors securing adequate sales volume in the territory to justify the expenditure of funds necessary to carry on effectively an advertising, sales promotion, and direct selling program?

2. Is it feasible for the utility ALONE to make available to its present and prospective customers sufficient different brands of electrical appliances so as to receive the full benefit of national advertising?

3. Is the utility's appropriation for advertising ample and is its sales promotion program ALONE extensive enough to reach effectively all classes of the masses?

4. Can the utility ALONE have salesroom displays adequate in number to serve best all prospective buyers existing in the mass market?

5. Is it economically feasible for the utility ALONE to increase its sales personnel to a sufficient size wherein all potential mass-market

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Adapted from an address entitled "This Era of Dealer Cooperation" presented before the Fifth Annual Sales Conference of the Edison Electric Institute.

buyers will be approached periodically?

6. Is it conducive to good public relations for the utility ALONE to employ sales methods which deprive its customers of their merchandise brand preference?

7. Is it sound business for the utility whose sole objective is to sell electric energy and whose first obligation is to serve the public, ALONE to assume additional risks and obligations by financing and servicing all electrical appliances sold in its territory?

8. And, finally, is the cost of securing added business through this single-handed merchandise sales method justifiable?

If one thousand such questions were asked, it would be appropriate to apply that trite expression, "A thousand times NO." Such questions will arise when any utility, employing the single-handed sales method, approaches manufacturers and distributors with a view of formulating a cooperative plan to sell more service to more customers. Every utility is primarily interested in securing the maximum sales results at the minimum cost and, therefore, shares the same interest in seeking the answers to those questions.

The records show that during the three years (1932-1934) previous to the installation of a Dealer-Utility Cooperation Program the average annual kilowatt hour consumption per residential customer of the company with which I am associated increased 4%—that of the Nation increased 5%—and the company's average annual kilowatt hour consumption per residential customer was then 8% higher than the national average.

Three years ago a drastic rate reduction was made effective, and the management fully realized that the anticipated loss in revenue could not possibly be recaptured unless more customers were sold greater increases in use.

A survey of the territory served revealed that there were scarcely any dealers through whom electrical appliances could be purchased. Furthermore, there was no apparent interest among merchants in the sale of this class of merchandise.

The company at that time represented two of the leading major appliance manufacturers through exclusive franchises, and approximately 80% of all major appliance sales were made through the company, involving only these two products. Other well-known manufacturers making nationally-advertised products had no sale outlets whatsoever in the territory.

Valuable sales aides available from distributors other than those supplying our own needs, could not be, and so were not being, utilized. In fact, the potential business to be secured through dealers was too lean to justify sales help from the other manufacturers and distributors.

Dealers Consulted

Dealers, prospective dealers, manufacturers, and distributors, were approached in order to determine from their viewpoint those requirements necessary to formulate a program which would enlist their selling efforts. The results of these conferences provided the company with that type of information needed in creating a policy which would be most acceptable to all sales allies.

Needless to say, the fundamental principles involving advertising, sales promotion, salesmen's compensation, and other sales practices so prevalent in operating the single-handed merchandising method, were entirely discarded, and the company for the first time embarked upon a sales program designed to sell increased use to the masses—employing the mass man power of dealers, distributors, manufacturers, and utility.

The proof of the pudding is in the eating, and I submit facts which furnish the answers to the eight questions which I raised but a moment ago concerning the soundness of a dealer-utility cooperation program.

During the past three years which embrace the era of dealer-utility cooperation of my company, the following accomplishments have been attained:

1. The number of major appliance dealers has quintupled.

2. The dollar volume in electrical merchandise sold through these allies has increased tenfold.

3. The average annual kilowatt hour consumption per residential customer has increased 71% — that of the Nation increased 28% and the company's average annual kilowatt hour consumption per residential customer is now 44% higher than the national average.

4. The company's merchandise capital-in-use, involving moneys invested in stock and accounts receivable, has been reduced 46%.

Lest the impression be gained that these results represent nothing more than a case of "robbing Peter to pay Paul," let me especially stress the fact that during the

(*Continued on page* 56)

Mass selling to a mass market is best obtained through the hundreds of salesmen, countless display floors, and diversified facilities of independent electrical appliance dealers . . . . . .

Cooperative Merchandising – The Dealer Viewpoint

By J. M. Evans
President, The Evans Company
Birmingham, Alabama

MUCH thought doubtless has been given by the utilities to the best type of cooperation to be extended to dealers and various plans have been used. Whatever may be the arrangement, in my opinion, the basic idea should be to assist the dealers in selling the most electrical appliances possible at a profit.

The type of cooperation depends largely on the degree of saturation of the appliance in question. When new products first appear on the market, the job of pioneering them naturally falls on the utilities. A few dealers may lend assistance but, for the most part, until 10 per cent saturation is reached, the sales expense is too great for the independents to undertake. Therefore, the utilities have to employ sales forces and do the missionary work.

As saturation increases from 10 per cent up to 40 per cent, a new situation develops. It is then that sales can be increased to a maximum volume if the utility sets up a strong dealer cooperative department and directs sales through the dealers. This provides more contacts with the public than any utility sales force could make economically, and the acceptance is such that dealers can sell the appliance in sufficient volume to make a profit.

Saturation Important Factor

During this period the utility can be of material assistance to the dealer by leading the way in advertising and sales promotion, by looking ahead and arranging seasonal campaigns as well advertising splashes in behalf of particular appliances. Many utilities go even further and provide actual training for salesmen where dealers are unable to employ sales managers, offer prizes and contests, provide window cards and various other types of services.

From the point of 40 per cent saturation and above, a new problem is created for the utility. Here the lower income groups must be reached, and the job of the utilities, in cooperation with the distributors, is to graduate distribution on the most efficient basis, through the larger independent outlets, furniture stores and department stores, to the end that sales expense will be low and markups consequently less.

In other words, at this stage of saturation, appliances should be sold through places where buying habits have been established over a period of years. Customers come in to buy furniture, hosiery, or what not and expose themselves to the electrical appliances on display. Radios long ago reached this degree of saturation and electrical refrigerators are approaching the point where it will no longer be profitable to employ outside salesmen whose contacts would necessarily have to be largely with the lower income brackets.

As the greater degrees of saturation are reached, there is one important factor which the utility should study: the relative buying power of the populace compared to the number of independent electrical dealers in business. In other words, haven't the manufacturers and distributors in their push for volume appointed more dealers than the traffic will stand? The utility with its capacity to gather figures and make surveys should be in good position to advise distributors in regard to the desirable number of dealer outlets in any city.

Judicious Dealer Selection

In my opinion, a distributor should not appoint any one a dealer who isn't willing and able to maintain a display of the merchandise, operate an adequate service department, and spend at least three per cent of his gross income in constructive advertising. The utility has a right to expect this if it extends the degree of cooperation outlined, and the distributor can expect it provided he has been judicious in appointing dealers.

With this setup, the dealer can afford to employ a few well trained salesmen, men who will stay with him and produce. Personally, I believe that any salesman in the business over one year who cannot produce at least $20,000 in gross volume per year is either a misfit or his dealer is a misfit.

This is an age of mass attack and its value is right now being demonstrated in the electrical appliance field. The electrical kitchen was just an idea a few years ago, but today it is being put over successfully on all fronts, thanks to a remarkably concerted drive on the part of the whole industry from the manufacturers on down, but especially including the utilities and the dealers.

Carefully directed utility cooperative plans and judicious selection of dealer outlets by distributors, combined with the far-reaching consumer publicity of such manufacturer-sponsored organizations as the Modern Kitchen Bureau, the Electrical Housewares Program, and the Better Light—Better Sight promotion, are all important factors in developing the mass attack necessary to obtain for the electrical industry its share of the consumer's dollar.

Merchandising

IN THIS SECTION:
Advertising Methods for the Progressive Dealer
Commercial Cooking Promotion Survey
Increased Sales Follow Store Modernization

Dealers' Organization Announces Program .

ORGANIZATION of the National Association of Radio and Appliance Dealers was completed at a meeting held recently in New York City. The meeting was attended by a group of 55 delegates representing local associations with an aggregate membership of over 3000 members.

Officers elected at the meeting include Russell A. Atkinson, Brooklyn, N. Y., president; Homer C. Davis, Philadelphia, Pa., vice-president; Wm. H. Frederick, Wilmington, Del., secretary; Ralph Wegner, Ft. Wayne, Ind., treasurer; and B. H. Poucher, 3930 Lancaster Avenue, Philadelphia, executive secretary.

In addition, twelve regional vice-presidents are to be elected within a short time. The twelve regional districts will correspond to the twelve federal reserve districts.

The following statement of policies and aims prepared by the Resolutions Committee was unanimously adopted as the working platform for the association.

"1—Stabilization of the price structure, through every legal means, and with the active cooperation of retailers, manufacturers, and distributors, and to that end we ask the immediate cooperation of all manufacturers and distributors of branded appliances and radio.

"2—We favor the sale of appliances and radio only through established retail appliance and radio merchants, and seek the immediate discontinuance of the sale of these products to, and by, (a) discount houses, (b) cooperative consumer buying groups, (c) corporation employees groups, (d) public utilities and their employees.

"3—We favor a controlled production, scheduled by manufacturers to coincide with current consumer demands, and to that end we pledge our cooperation in providing the essential facts of inventory and sales, necessary to such production control.

"4—We favor the uniform trade-in price schedule on all appliances and radio, to be included in the retail price established by the manufacturer, and the local distributor.

"5—We ask that all appliances and radio be labelled, and identified with essential specifications and constructional features, model numbers, and price, in such a manner that it is not readily removable.

"6—We favor the elimination of cruises, 'spiffs', prizes, and all other forms of high pressure or unethical deals offered to dealers.

"7—We urge all associated dealer organizations to police their own members, and all other dealers in their trading area, through constant shopping, and such other means as may be indicated.

"8—We urge the immediate elimination of any and all forms of dishonest or misleading advertising and sales promotional methods by dealers, manufacturers and distributors.

"9—We favor the free and frank interchange of all facts, figures, ideas and methods, among all of our membership, for the common good.

"10—We pledge our co-operative support to all similarly constituted national associations, whose aims and purposes are similar to ours.

"11—We pledge our wholehearted support of those manufacturers and distributors, who, in recognition of our need, will make possible the fulfillment of this program, for the common good."

The next meeting of the association will be held in Chicago during the first week of July. This date will coincide with the seasonal visits to the merchandise mart of housewares and electrical appliance buyers and the meetings of furniture buyers. As a result it should be well attended by all types of dealers in radio and appliances.

Local dealer associations and individual appliance dealers are invited to join the association.

Dealers' Responsibility In Selling Appliance Use .

Too many dealers are of the belief that it is the function of the electric utility to sell the public on the use of appliances, it was pointed out by C. E. Greenwood, commercial director, Edison Electric Institute, in an address presented to the Fifth Annual Conference of the Southeastern Electric Exchange at Biloxi, Mississippi.

"It is just as important that the dealer should realize that it is part of his job to keep electrical appliances in use," said Mr. Greenwood. "They are too apt to take their profit on the sale and then say it is up to the utility to keep appliances alive.

"But let the short-sighted few ponder on the fact that the replacement sale is made on the device worn out from use, and not rusted out from storage in a cupboard."

Household Appliance Sales Enjoy Seasonal Increase . .

March sales of household electrical vacuum cleaners totalled 135,543, increase of 35 per cent over the February figure of 100,412, and a decrease of 32.37 per cent from the March, 1937, aggregate of 200,414, according to announcement by C. G. Frantz, executive secretary of the Vacuum Cleaner Manufacturers' Association.

Household washer shipments in March totalled 117,025 compared to 94,734 in February, an increase of 23.54 per cent, but a decrease of 38.21 per cent from the industry total of 189,393 in March, 1937, according to figures reported by J. R. Bohnen, executive secretary of the American Washing Machine Manufacturers' Association.

March ironer shipments were 10,727, compared to 10,823 in February and 19,086 in March, 1937.

Well Planned Advertising

Advertising can be an investment instead of an expense. An expert explains how.

By Conrad Campbell

SUCCESSFUL advertising does not just happen. There are certain rules and principles which have been found to lift advertising out of the commonplace and make it earn money for its users. Such advertising becomes a profitable investment rather than an expense.

You can employ such advertisement in your business. All that is required is a commonsense attitude toward the subject, a little knowledge of what others have done to make their advertising appeal resultful, and a little time taken to make certain your advertising at least meets the fundamentals of salesmanship in print.

You employ system in many ways throughout your store. The shelf and window display is in order. Your accounts are kept according to system. You advocate labor-saving, time-saving methods. Good business!

There is also a system for gathering ideas and shaping them into sales advertisements.

Take the Common Sense Viewpoint In Planning Advertising

When customers come into the store, you greet them, find out their desires and then explain the merits and uses of the merchandise you wish to sell them. Why not do the same thing in your advertising?

Suppose you were anxious to sell a certain item to people passing your store. If you could forget your dignity long enough, you'd mount a box in front of your store and address the passing throngs.

What would you do first? Well, chances are, if you felt you had to talk to a group of people, your first consideration would be a study of the article you were going to feature in your talk. You would want to know all about it, particularly its good points so that you could emphasize them in your talk. You would also plan to be prepared to answer any questions or objections that might be raised.

Having this information well in mind, your next problem would be to attract the attention of the passersby. The crowd is unaware of your presence. If they think you want to sell them something they may even shy away. So your problem at this point may be divided into three parts: to draw attention, to hold that attention until you have told your story, to tell your story so well that you persuade your listeners to put your suggestions into action.

Figuratively speaking, the passing throng comprises the readers of your newspaper and the box which you mount, to put you above the heads of others about you, is your particular space in the columns of that paper.

In your newspaper advertising, as in your hypothetical speech, an effort must be made to draw *favorable* attention and to express your ideas plainly in a few well chosen words that people can absorb quickly and understand.

Before you start to write your advertisement you will carefully study the articles you plan to sell. What will they do for users? How are they made? What special features can be emphasized? Who should use it? Is it a necessity or a luxury? Are you going to make a bargain price or do you want people to forget price in the superior values of the marchandise?

How To Get Attention

Now for the attention getter. People who read newspapers are busy folk. They have many other interests to consider. There is no reason why they should read your sales message unless it becomes so prominent to them as they look at the newspaper page that they are drawn to it.

First factor to be given consideration is the layout—the plan of your advertisement. Its purpose is

"Spot ads" can be designed to stand out on page even though small space is used . . . .

THIS CIRCULATOR IS JUST WHAT YOU ORDERED

Kelley GULFBREEZE

CIRCULATOR

A LOW PRICED FAN WITH CERTIFIED RATING

... A HIGH QUALITY LOW PRICED FAN WITH THESE SIX BIG FEATURES

1 QUIET—The KELLEY GULFBREEZE CIRCULATOR makes no noise. Firestone rubber vibration dampeners are standard equipment. Rubber insulation. Motor mounted on rubber.

2 LOW POWER CONSUMPTION — Equipped with efficient, rubber-mounted General Electric Motor. Surprisingly low operating cost. Motor is designed to give no radio interference.

3 AUTOMATIC BELT and tightening drive. This means higher efficiency. A superior KELLEY feature. Ball bearing journal packed with grease sufficient for 2 years' service.

4 SPUN OUTLET ORIFICE made from deep drawing quality steel makes possible high air deliveries and efficiency. Made possible by Tennison's competent engineers and manufacturing facilities.

5 BLADES of the KELLEY GULFBREEZE CIRCULATOR are rated according to the standards of the National Fan Manufacturers' Code. Fan blades are curved which means higher efficiency. Die stamped and dynamically balanced.

6 BEAUTIFUL green crinkle finish and aluminum make the KELLEY GULFBREEZE CIRCULATOR stand out head and shoulders above all the rest. It has a durable finish which will last for years and years. Direct eye appeal for the most discriminating buyer.

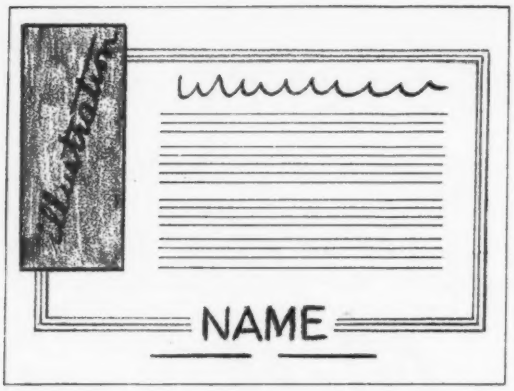
The electrical industry has been waiting a long time for this circulator—the KELLEY GULFBREEZE CIRCULATOR—a low priced fan with certified rating and five other important, superior features found only in higher priced fans. The KELLEY CIRCULATOR is designed for BOTH residential and commercial use. Comes in three sizes to meet any and all requirements. There's big profit in this fan for you. Complete details may be secured now. Immediate delivery.

Your customers are waiting to see the KELLEY GULFBREEZE CIRCULATOR. Write or wire for specification folder, prices and all other information.

CAN YOU NAME ANY FAN ON THE MARKET WITH THESE SIX SUPERIOR FEATURES WHICH SELLS AT A MODERATE PRICE?

SEND FOR PRICES AND SPECIFICATIONS—AIR CONDITIONING DEPT.

TENNISON
MANUFACTURING
COMPANY
HOUSTON, TEXAS



to cement the attention of passing eyes on your advertisement. Size alone will do it, but large space in a newspaper costs money, and with a little care, much smaller space can be made even more attention-arousing.

Making the advertisement bold in appearance may do the trick. A heavy spot of black will stand out on the page. A well-planned alternation of black and white will do more. When you prepare the layout of your advertisement, or have the newspaper man do it for you, place your drawing of it on a printed page. Does it stand out or is it merely absorbed into the general page? If it becomes lost on the page, stop right there and figure out some way to make the shape, size or style of your layout distinctive and different. While experts can be hired to do this, you can do it too with just a little jugling of the outlines of your advertisement. In fact, you'll find it a fascinating game if you will try it. A number of very simple but outstanding layouts are given here, which you can duplicate or even improve with very little trouble.

Illustrations and Headlines

Next in importance to the general layout as an attention stopper are illustrations and headlines. Headlines should be brief so that a hurried reader can grasp its meaning quickly, but it must carry a thought that will *stop* his attention. If it can build a word picture in the reader's mind of a use for the product which will interest him, you may be sure he will stop and read further. There are certain kinds of headlines that seem more effective.

Interrogatory Headlines.—When you ask a question, for some reason, people just feel they must stop and answer it, even to themselves. If they do stop and answer it you've played your game correctly — you have their attention. Good examples are "Does Your Husband Like Toast?" "Want to Keep the Young Folks Home Evenings?" "Ever Have This Experience?"

Before and After Headlines.—These headlines, sometimes called "pro and con," are also effective. Examples are: "Was $15. Now $10.45" "She Hated Radio Until He Got a ————" "Johnnie Complained of Headaches—But Proper Lighting Made Homework Easy."

Interesting Statement of Fact.—This type of headline must be interestingly told. For example: "She Finishes Her Ironing In Half the Time" "Everyone Admired Her New Bridge Lamp" "A New Tube Fixed That Fuzzy Sound In a Jiffy."

Direct Command Headline. — Care must be taken not to offend your readers when using this type of headline. On the other hand, people like to be reminded pleasantly. Many will not take action without some definite prodding. Examples: "Now Is the Time To Buy ————" "Delay Is Dangerous—Fix That Worn Electric Cord Today" "Make Up Your Mind To Use ————, It's Better."

There are other types of headlines, of course, but these four are the general types of eye-catching heads that may be used over and over again with excellent results.

The headline, like the front entrance to an attractive residence, should be pleasing and have some arresting individuality. Try to make it "different" and yet be suggestive of what is to follow. Your passing throng is well fed up on the trite and ordinary, they'll let their attention go right on by your message unless you flag it with words that make them *stop, look* and *act.*

(Continued on page 52)

The layout at the top of the page and the narrow advertisement at the right were designed to concentrate attention upon a single illustration. Below is an example of the catalogue type layout featuring many items. . .

This NEW device *Protects* Both YOUR customer and YOU

YOUR *customer against danger, expense and annoyance*

The Fustat cannot be replaced with a penny or other substitute for the fuse — or with a size too large to protect.

The user is protected against anyone unwittingly creating a fire or personal injury risk thru haphazard practices.

But that's not enough . . . A non-tamperable fuse that would blow on starting currents would be an impractical device — a terrible nuisance — so the Fustat . . .

Wipes out any excuse for tampering because it stops needless blowing.

Because of its long time-lag a Fustat won't blow when motors start on washing machines, refrigerators or other appliances.

An ordinary circuit can be loaded right up to capacity and yet protected with a 15 ampere Fustat. It gives SAFE protection without useless blows.

Prevents hazardous burnout of flexible cords . . . in spite of long time-lag

The Fustat contains a fuse. The ability of a fuse to protect against dangerous cord shorts, grounded sockets, etc. is well known.

The quick action of the Fustat on such dangerous "household shorts" prevents spraying of molten metal, starting of fires, burning of users.

Fits present fuseholders

Through the use of an inexpensive adapter, that locks in place, the Fustat fits in any standard Edison base fuseholder.

On new jobs you can specify that panels, switches, etc. be equipped with Fustat bases.

Retails at 7½c

YOU *against loss of profit*

Since the Fustat cannot be replaced with a penny or other substitute for the fuse, or with a fuse of too large a size, it positively stops the user from dangerously overloading his circuits.

If additional circuit capacity is needed the user cannot readily side-step the issue at the sacrifice of safety. Yet the Fustat . . .

Permits adding more appliances to present circuits.

Because it doesn't blow needlessly the Fustat permits loading up the circuit to capacity. This often means it is possible to close a sale that would be missed if the expense of a new circuit had to be stood by the user.

Thus you can expand the use of present circuits with perfect safety — and without incurring needless blows.

Abolishes needless "blown-fuse" service calls

Calls made just to replace a fuse blown by a motor-starting current are wasteful and costly to everybody.

The user loses time and temper and often money when service is off.

The contractor or dealer loses if the user kicks about paying full cost of a call where the only work done was to replace a fuse. On top of this the service man has been dragged away from more profitable work.

The Fustat offers a common-sense way to stop this wasteful evil — It doesn't blow needlessly.

It is just good business to sell, install and use Fustats

The FUSTAT

Retails at 7½¢ in 15 to 30 amp. sizes

For full information write to any of these firms

BUSSMANN MFG. CO., University at Jefferson, St. Louis, Mo.
JEFFERSON ELECTRIC CO., Bellwood, Ill.
KIRKMAN ENGINEERING CORP., 121 Sixth Ave., New York City
NATIONAL ELECTRIC PRODUCTS CORP., Fulton Bldg., Pittsburgh, Pa.
UNION INSULATING CO., 277 Broadway, New York City

Commercial Cooking Promotion

INCREASED promotion activity in the commercial cooking field is indicated in a survey just completed by the Edison Electric Institute. More than one hundred light and power companies submitted data outlining the results of their activities in 1937 and plans for 1938. . .

SALES of commercial electric cooking equipment totaling 63,467 kilowatts during 1937 are indicated in a survey just completed by the Commercial Electric Cooking Council, a joint national program of the Edison Electric Institute and the Food Equipment Section of the National Electrical Manufacturers' Association organized in the spring of 1937 for the purpose of serving utilities and dealers interested in the promotion of commercial electric cooking equipment sales, particularly of the counter and pantry type.

Other interesting facts revealed by the survey, which covered the commercial cooking promotion activities of 104 utility companies, are:

Average annual estimated consumption per kilowatt of this type load connected, 1,224 kilowatt hours.

Estimated annual revenue per kilowatt connected, $25.17.

Estimated total annual kilowatt hours consumption from load added in 1937, 72,233,251.

Estimated total annual revenue resulting from load added in 1937, $1,599,150.

The companies that reported figures for both "commercial customers" and "kilowatts connected" show an average increase of 30 watts per customer added during the year. This figure is based on the total commercial customers served by the reporting companies rather than on the number of these customers that are prospects for or users of this type of equipment. Other independent surveys have shown that about 10 per cent of commercial customers are eating places including lunch counters, drug stores, etc., and if this figure is corrected to that ratio, it is equivalent to 300 watts added for every such establishment.

Five companies reported they use only full time commercial cooking salesmen, twenty-seven companies reported they use full time and part time salesmen, and sixty-four companies reported they use only part time salesmen.

In the companies that use only full time salesmen for the promotion for this type of business, these specialists averaged $11,007 in E.A.R. per man, last year. Part time men devote on the average 19.6 per cent of their time to the development of commercial electric cooking load.

Since the Council was formed to promote the sale of electric counter and pantry equipment it is interesting to note that those companies reporting on the division of 1937 sales, estimate that 68.6 per cent of last year's sales were of this type.

Wiring-In Cost

Fifty-two companies report they do nothing to off-set the cost of wiring, thirty-seven companies report they allow from $3-$6 per kw connected up to certain limits. Four companies did not reply and the remaining eleven companies made one of several replies, some of which were: sell installed; check and prepare wiring lay-outs; wiring added to cost of equipment and financed.

Considering the load building value of this equipment it is suggested further consideration might be given to the value of some form of installation policy or wiring-in allowance, by those companies now doing nothing to meet this problem.

Sales Policies and Practices

The Council has established cordial relations with the National Association of Food Service Equipment Dealers and through this Association dealers have been brought to a clearer recognition of the desire on the part of most utilities to work with them in the development of this mutually profitable load.

The dealer can be a powerful ally in recommending the use of electric equipment rather than equipment using competing fuels. As customer acceptance for this equipment increases, dealers will be further encouraged to take an active interest in promoting its use, even in communities where the utility happens to merchandise this equipment.

Financing

In reply to the question, "Do you finance equipment sales?" thirty-six companies reported "yes," twenty-four companies reported "some," two reported "only when necessary," two reported "company sales only," one reported "credit corporation" and thirty-nine reported "no."

Servicing

There were 101 replies to the question "Who services equipment?" and these are tabulated below:

Utility	**67**
Utility-Dealer	**10**
Dealer	**11**
Manufacturer	**5**
Utility-Manufacturer	**2**
Contractor	**2**
Dealer-Manufacturer	**1**
Dealer-Contractor	**1**
Utility-Contractor	**1**
Utility-Manufacturer-Dealer	**1**

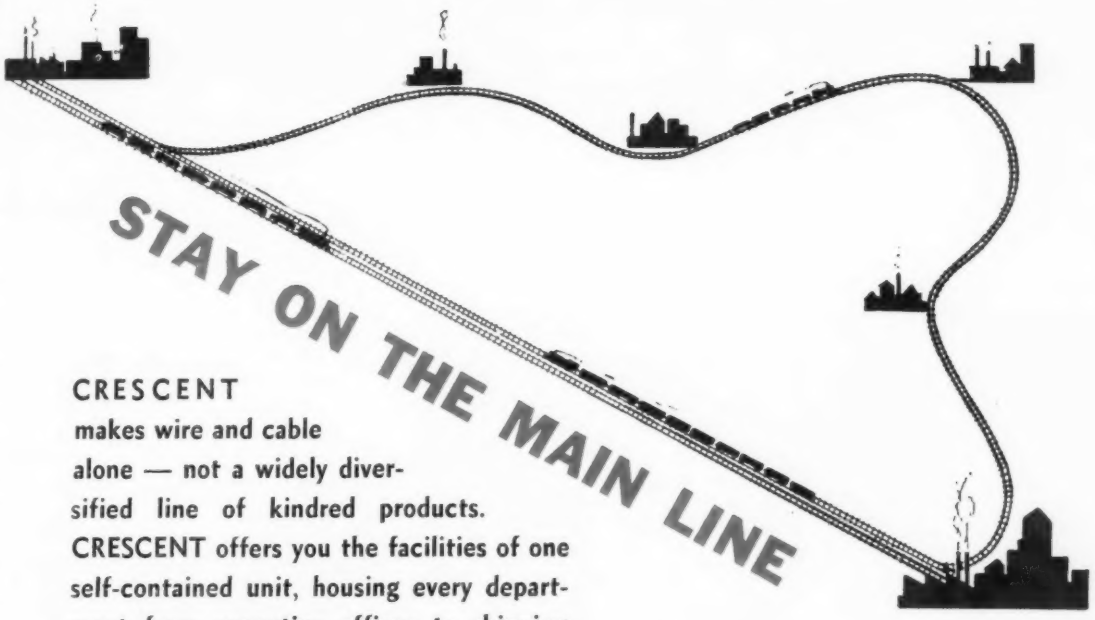
Seventy-six companies plan more extensive sales activities of commercial electric cooking equipment during 1938, five companies report their plans the same as last year, two companies are undecided as to what they will do and only nineteen companies report they are not planning more extensive selling of this type of equipment.

Eighty-three companies report that their future plans will tie in with the plans of the Commercial Electric Cooking Council. These plans are described in a comprehensive plan book issued recently by the Commercial Electric Cooking Council.

VARNISHED CAMBRIC CABLES • RUBBER POWER CABLES • BUILDING WIRE • RADIO WIRES • SIGNAL CABLE • FLEXIBLE CORDS • LEAD-ENCASED AND PARKWAY CABLES • ARMORED CABLE

CRESFLEX NON-METALLIC SHEATHED CABLE • SERVICE ENTRANCE CABLE • MAGNET WIRE • BARE WIRE

ORDERS PLACED WITH CRESCENT



STAY ON THE MAIN LINE

CRESCENT makes wire and cable alone — not a widely diversified line of kindred products. CRESCENT offers you the facilities of one self-contained unit, housing every department from executive offices to shipping room; performing every manufacturing operation in one plant. At CRESCENT your orders stay on the main line of production—not side-tracked from one plant to another. Your orders are under the watchful eyes of men who are vitally interested in seeing that your specifications are faithfully carried out and the orders delivered as you want them. The result—SUPERIOR CRESCENT SERVICE!

SOUTHERN REPRESENTATIVES

ATLANTA, GA.
Edgar E. Dawes
A-4 Rhodes Bldg. Annex

DALLAS, TEX.
Royal Smith
912 Commerce St.

NEW ORLEANS, LA.
Paul Hogan, Jr.
305 Levert Bldg.

CRESCENT INSULATED WIRE & CABLE CO. INC
TRENTON, NEW JERSEY

CRESCENT ENDURITE SUPER • AGING INSULATION • WEATHER-PROOF WIRE

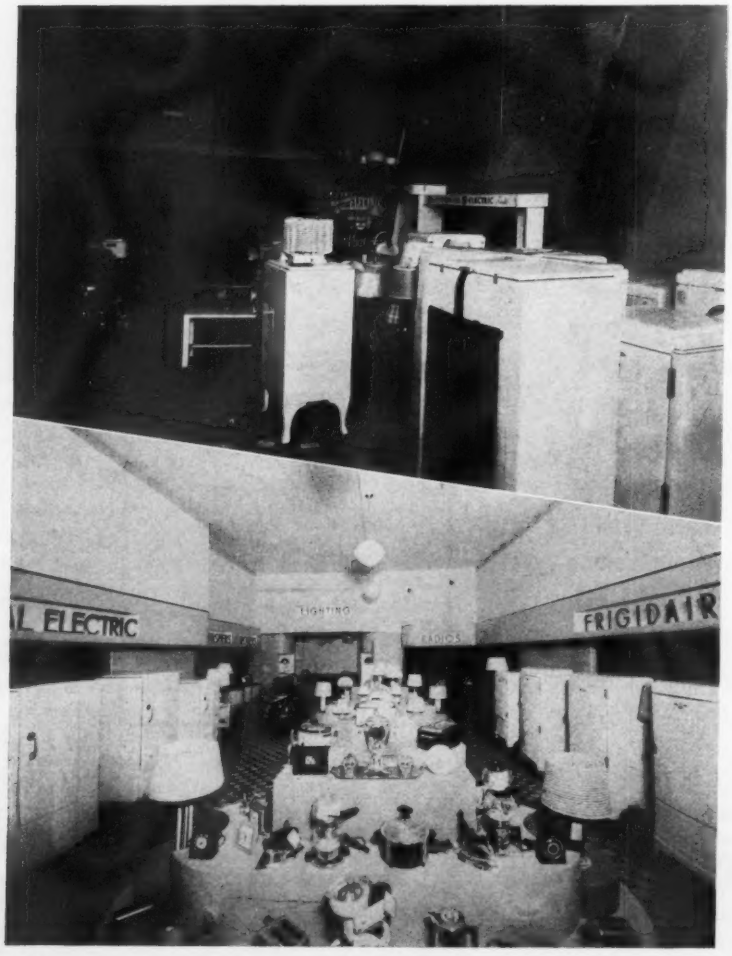
Increased Sales Follow Store Modernization .

An unusual example of the amazing change that can be made in an electrical appliance store through the application of paint, light and modern display methods is to be found in the photographs below showing the store of Fred Thompson, veteran appliance dealer of Norman, Oklahoma.

What will be of more interest, perhaps, to electrical appliance dealers is the fact that Mr. Thompson's sales have been improved to an even greater extent than the appearance of his store.

The well dressed store, like the well dressed man, commands respect. It is not difficult to understand that people naturally enjoy shopping much more in a store like that in the lower photograph.

Mr. Thompson attributes much of the credit for his new display floor to Jimmie Cheatham, of the sales development department of the Oklahoma Gas and Electric Company. The services of members of the sales development department are available to all dealers in the territory served by the company.



An unusual example of the tremendous improvement than can be made in a display room with light, paint and modern display methods . . .

Unique Partnership Dissolved . . . .

CONSOLIDATION of Rabb-Smith, Greensboro, N. C., electrical appliance and sporting goods firm, with Bocock-Stroud not only erases the names of both from the masthead of the firm, but ends one of the most interesting partnerships in the electrical appliance field.

Although Rufus (Shirt) Smith carries over into the new firm as a stockholder and officer, Moore (Bill) Rabb ends his connection with the business in order to enter employment which will permit him to return to his first love—baseball—in the semi-professional field.

Rufus Smith Moore Rabb

As Rabb-Smith, the two former major league baseball players continued to knock "home runs" at their combination electrical appliance and sporting goods store on Elm street, Greensboro.

Rabb was well known among the sports fans. He played for a time with the New York Yankees and also performed in the International League, American Association, Southern Association and Texas League.

Smith was known as the smallest man to hold a steady position on a major league pitching force during his professional career. While in the major leagues with Rabb, he held a record for catching more players off first base than any other pitcher during his time.

Mr. Smith and a group of associates got together to form the Greensboro branch of the Bocock-Stroud firm, with C. V. Connelley, as president. Sporting goods, however, is not their main line. They handle refrigerators, ranges, washing machines, and several lines of smaller appliances.

They have just moved into their new quarters on North Elm street. In the new place they have three times as much floor space as at the old Rabb-Smith site, have enlarged the sales force and, despite the recession, are confident of "going to town."

Asheville Building Industry Holds Exposition . . . .

Asheville's fourth annual Mednernization and Building Exposition, April 27-30, proved the most satisfactory ever staged, with a wider range of products and an unprecedented diversification of exhibits. (*Continued on page* 25)

Calling all dealers ...WHO WANT TO BE LEADERS

12 BEAUTIFUL HOUSEHOLD MODELS...ALSO A COMPLETE LINE OF COMMERCIAL RANGES WITH THESE SENSATIONAL SELLING FEATURES.

STANDARD *Kalmax* AND STANDARD *Chromalox* SURFACE HEATING UNITS mean more speed... easier cleaning... new even-glow heating ...new flexibility... new economy... new beauty.

...lead the parade of profits mail this coupon Now!

l the 25 years of Standard's ry there has never been such lendid opportunity for distrib- and dealers to join forces for ent opportunity and future pro- . An organization old in experi- becomes young in viewpoint . . . rmination and *drive!*

e entire Standard line has been revised, re-styled and sensa- l selling features added. The manufacturing facilities have been ged. A program of promotion and advertising has been created ve distributors and dealers every material help necessary to more merchandise.

e whole Standard program is based upon a plan of partnership ged to the proposition that every distributor and dealer shall more sales and profits. The Standard franchise is more valu- today than ever before. A dramatic sales presentation is pre- d. Send the coupon and get the complete story. Standard Electric

STANDARD ELECTRIC MANUFACTURING CORP.
Toledo, Ohio

Please send me full particulars about Standard's new program of profit.

Name _____

Address _____

City _____

State _____

Contracting

IN THIS SECTION:
Wiring In Old Buildings Financed by EHFA
Busway Distribution for Heavy Loads
Adequate Wiring in Oklahoma City's Civic Center

Wiring In Old Buildings Financed by EHFA . .

A WIRING financing plan available for the wiring of old buildings, where the unpaid balance is not less than $40, has been announced by the Electric Home and Farm Authority.

The financing is not available for wiring in new buildings, nor in industrial or commercial establishments, although multiple-family dwellings will be eligible for financing.

Under this plan, a finance charge of 5% per year on the original unpaid balance will apply to wiring loans. A minimum down payment of 10% of the installed selling price will be collected and retained by the contractor. The maximum period for repayment will be twenty-four months.

In all installations, the National Electrical Code, as well as state local ordinances, codes and inspections will be observed.

Notes covering the sale of wiring will be accepted without recourse on the contractor.

The wiring financing plan will be available only in territories of those utilities cooperating with EHFA in the financing of appliances, and will be confined to property owners or to tenants with property owners' endorsements on the notes.

The following example demonstrates how the wiring financing plan will operate:

Utility company enters into an agreement with EHFA covering the conditions and regulations of the wiring financing plan.

Contractors are notified in writing by EHFA of their authorization to finance wiring installations through EHFA.

Contractors are informed of the standards and minimum requirements of all wiring jobs which have been previously agreed to by the utility and EHFA.

Before accepting the sale of a wiring installation for a customer, the contractor will prepare a proposal describing the job to be done. This form will be signed by the contractor and acknowledged by the customer. In addition, the contractor will obtain the customer's credit statement. The information contained in these two forms when submitted to utility or EHFA, as the case may be, will be the basis

(*Continued on page 25*)

Building Construction At Peak In Baltimore . . .

The $35,000,000 building boom now underway in Baltimore is of considerable interest to electrical wiring contractors and distributors of electrical equipment and supplies.

Residential construction in Baltimore and suburbs now under way or planned immediately covers an area equivalent to 245 city blocks. The estimated cost is $24,000,000. According to figures compiled it is, with one exception, the greatest volume of residential building at any given time in the history of the city.

Of the total amount, $15,000,000 will be expended on slum clearance projects, to comprise the equivalent of forty-five city blocks.

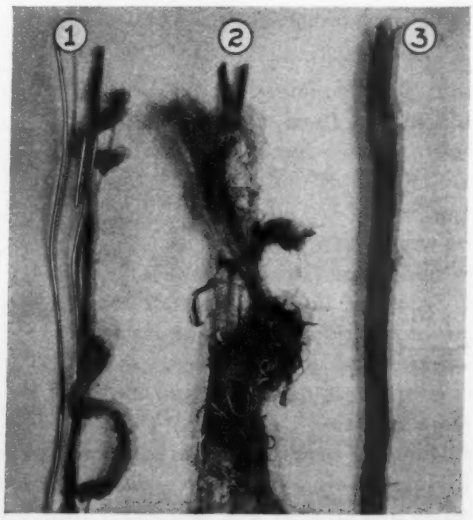
Major institutional building projects amount to $3,250,000; industrial construction, $5,000,000, and commercial construction, $1,500,000.

Rats Damage Cables In Laboratory Tests . . .

The results of a 20-hour test conducted with white rats at the Wirthmore Research Laboratory, Malden, Massachusetts, are shown in the accompanying photograph. Samples 1 and 2 represent cables of the non-metallic sheathed type while sample No. 3 is of a protected neutral type.

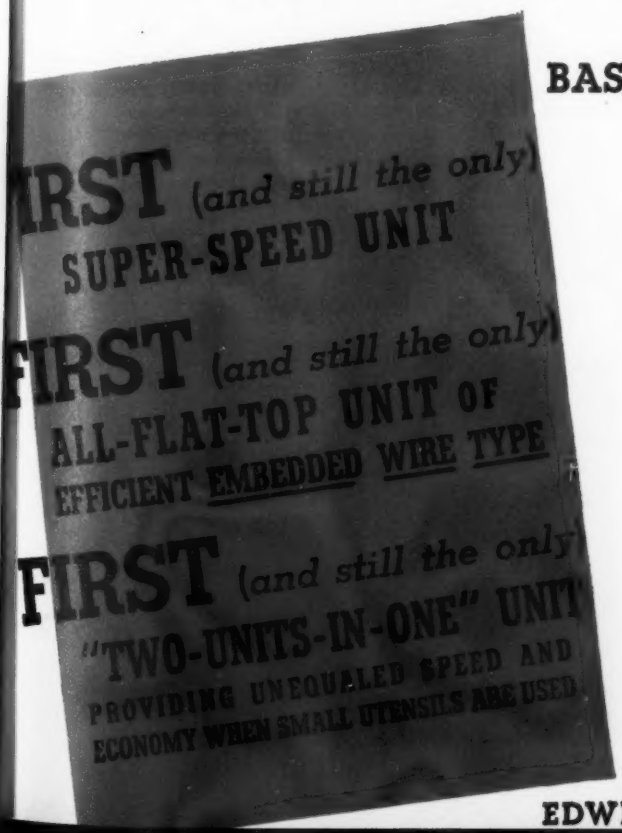
The City Electrical Inspector of Malden, Massachusetts, recently was considering seriously prohibiting the use of armored cable because of trouble resulting from the use of improper fittings and sloppy workmanship. He planned to substitute non-metallic sheathed cable.

Before definitely deciding to prohibit the use of armored cable, the inspector had tests made by the Wirthmore Research Laboratory. The results were that the rats destroyed the material in a very short time, and Mr. Sanborn, the inspector, decided to permit the use in his locality of all armored cable that conforms to the national electrical code.



CHROMALOX Super-Speed

THE RANGE UNIT THAT HAD A FLYING START.


IRST (and still the only)
SUPER-SPEED UNIT
FIRST (and still the only)
ALL-FLAT-TOP UNIT OF
EFFICIENT EMBEDDED WIRE TYPE
FIRST (and still the only)
"TWO-UNITS-IN-ONE" UNIT
PROVIDING UNEQUALED SPEED AND
ECONOMY WHEN SMALL UTENSILS ARE USED

BASICALLY RIGHT FROM THE BEGINNING

Chromalox Super-Speed range units have from their initial appearance enjoyed exclusive and powerful advantages beyond successful imitation. They are FIRST in the designation SUPER-SPEED—a name that accurately describes the rapidity of their cooking . . . FIRST in flat-top efficiency, cleanliness, and convenience . . . FIRST in the wide area surface contact that transmits heat the fastest way known to science.

But Chromalox engineers are never satisfied. They are constantly striving for improvement, with the result that the Chromalox unit of today, while basically the same as the original Chromalox unit, is vastly better looking and more efficient.

The range manufacturers who supply these units on their product, the dealers who sell them, the housewives who cook with them, all are confident that they have the unit which is the standard-bearer of modern electric cooking.

Write us or our nearest representative

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●

EDWIN L. WIEGAND CO., 7600 Thomas Blvd., Pittsburgh, P

Busway Distribution Designed for Heavy Building Loads

By Baron Creager

ECONOMIES in construction, compactness, and efficiency are some of the advantages obtained in what is probably the largest busway installation in the South. The installation serves two large office buildings in Tulsa, Oklahoma.

Although separated by the width of one of Tulsa's principal streets, the buildings are connected by means of a tunnel. A busway installation through the tunnel permits both buildings to be served from a single service and through one meter, with resulting economy in power cost.

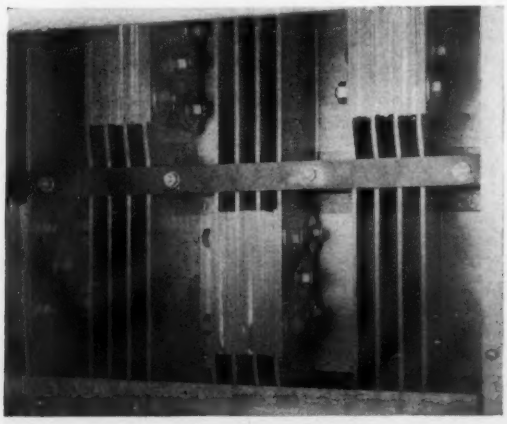
Both buildings are owned by Waite Phillips, Tulsa financier and philanthropist. The Philtower building has twenty-three stories; the Philcade building, thirteen. Both buildings occupy corner locations at the same intersection.

Three separate busway installations, ranging from 2,500 amperes to 7,500 amperes in capacity, have been installed in the two buildings by F. L. Lawson, of Lawson Electric Company, a Tulsa electrical contracting firm.

Four 500-kva network transformers are located in an under-the-sidewalk transformer vault and the load is carried from the transformers to the main switchboard in the Philcade building by a 7,500 ampere busway installation, consisting of four ¼-inch by 8-inch bus bars per phase.

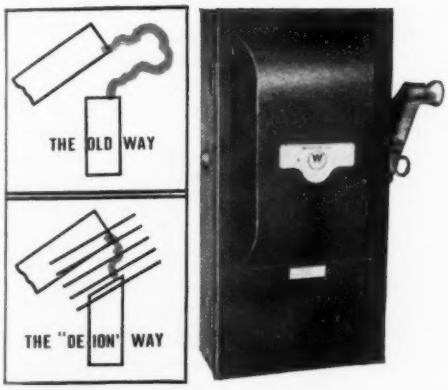
From the main switchboard of the Philcade building, energy is carried through a 136-foot tunnel by means of the third busway of 2,500 amperes capacity and consisting of three ¼-inch by 8-inch bars per phase. All circuits are three-phase, four-wire, 208/120 volts.

The busway conductors are of hard-drawn copper, supported on Ebony asbestos insulators in sheet



Three busway runs varying in capacity from 2,500 amperes to 7,500 amperes were used most successfully in two Tulsa office buildings to carry unusually heavy loads. Main switchboard is shown at top of page. Open duct shows 5000-ampere busway. At left is 2,500-ampere busway entering tunnel to serve building across street. At right below is a typical joint in 7,500-ampere busway connecting main switchboard with transformer vault. Bus bars are ½-inch by 8 inches . . . . . .

NO MORE BEADED CONTACTS JOE! WITH THOSE DIAMOND POINTED JAWS AND "DE-ION" GRIDS
YEP, AND THAT ONE-PIECE COPPER KEEPS 'EM AS COOL AS A CUCUMBER, TOO



In the past, arcs have been broken by "stretching." The "De-ion" quencher confines, divides and extinguishes arcs instantly — obviously preventing concentration of burning heat on contacts or arc barriers.

"DE-ION" GRIDS QUENCH DESTRUCTIVE ARCS

You don't have to worry about destructive flashovers or burned contacts when you install Westinghouse Safety Switches equipped with "De-ion" arc quenchers. The "De-ion" feature on all Westinghouse 575 and 600-volt switches gives positive protection by quenching arcs so fast that they can do no damage.

And years of trouble-free service are assured by these added Westinghouse features: Diamond pointed jaws and extended blades confine beading to points outside the contact areas — one-piece copper parts eliminate loose connections and keep contacts cool and tight.

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Westinghouse *Safety Switches*

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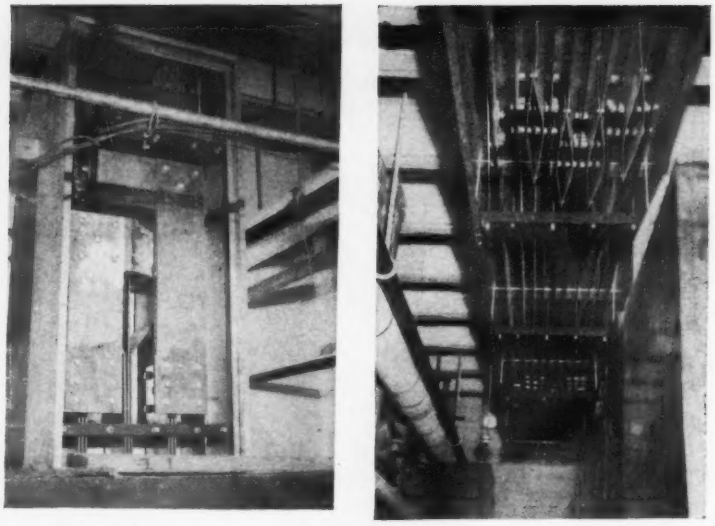


Transpositions are required at intervals to maintain balanced voltage conditions between phases—especially on long runs . .

aluminum housing. The bus bars are supported in the housing at intervals of five feet.

An interlacing type of construction is used in the 5,000 ampere busway. This construction is of recent design for the purpose of reducing voltage drop and decreasing temperature rise. With this design, conductors of different phases are interlaced, but at each end of the bus run, the bars of the same phase terminate into one large, laminated bus conductor connected to the studs of the main breakers.

Loads Unusually Heavy

The main breakers are open-mounted and are equipped with time limit overload protection. The main switchboard includes one 5,000 ampere breaker and one 3,000 ampere breaker. From the 3,000 ampere breaker, the 2,500 ampere busway is carried through the tunnel under the street. The 5,000 ampere busway is carried overhead to a switchboard that supplies air conditioning equipment and all other demands of the Philcade building.

A total of four 200-hp, 208-volt, three-phase synchronous motors are used to drive a battery of air conditioning compressors. These motors together with two large pump motors of 125 hp comprise the principal air conditioning equipment for both buildings, located in the Philcade building basement.

Installation of the busway between buildings permits the service of both buildings through a single meter, thereby obtaining for the ownership a minimum rate for the two buildings.

The busway through the tunnel is supported upward from the floor on angle iron frames, which simplified its installation.

The problem of hanging the 5,000 ampere busway overhead was more difficult, this being what is generally termed new work in a completed building. The ceiling in this instance is of reinforced pan concrete construction. Holes were drilled in the sides of the pan beams and horizontal pipes were fastened securely between the beams. The busway housing was hung from the pipes. This did not provide as good hanging as would have been possible with inserts placed when the slab was poured, but it has proved satisfactory.

Installation Not Difficult

Structural circumstances necessitated a slight two-way turn at one point in the tunnel but this, says Mr. Lawson, the contractor, was more easily negotiated with the busway than it could have been with four six-inch conduits, such as would have been required in a conventional conduit and wire installation.

The capacities used are considered unusually high and the project has attracted wide interest. Operation during the short period it has been completed indicates that the installation is entirely satisfactory and efficient.

Chattanooga Contractor Celebrates Twenty-fifth Anniversary . . . .

A two page spread advertisement in the *Chattanooga Free Press* recently announced the formal opening of the Chattanooga Electric and Neon Company in its new home on Market Street.

Founded by W. A. Jewell in 1913, the firm has enjoyed a steady growth for twenty-five years, marked at intervals by expansion into larger quarters. The electrical contracting firm is said to be the oldest in Chattanooga operating under one continuous ownership.

The two-page advertisement announcing the company's celebration of its twenty-fifth anniversary and the formal opening of its new home included photographs of various departments of the new shop and office as well as photographs of Mr. Jewell and Robert M. McKenzie, general superintendent. A unique feature of the advertisement was a series of more than fifty photographs showing outstanding wiring and sign installations.

Fixtures In Actual Use Promote More Sales . .

The Martin Wright Electric Company of San Antonio, Texas, is promoting the sale of various lighting fixtures by having them in actual use in their establishment. Fixtures for use in the work of the firm are all different—no ceiling fixtures or desk lamps are alike. If other electric fixtures or appliances are needed, each is of a different design.

This practice has enabled the firm to show prospective customers the lights recommended in actual use, giving a definite idea of just how much light would appear in the place of the prospect. The result has been quicker sales, increased sales, and better customer satisfaction. T. J. Reneberg is general manager of the firm.

Brush For Cleaning Wire

Do you cuss and fume when skinning wire for use with lugs or soldered joints? Copper wire may be cleaned easily with a fine screen wire brush such as used in many cotton mills for carding purposes. This method of cleaning the wire will be found much more satisfactory and efficient than the old method of using sandpaper.

Correcting An Amateur's Wiring Error . . . . .

WHEN the home remedy book fails, the doctor gets a call. When the company's "Jack-of-all-trades" slips up, the electrical contractor is summoned. Especially is this last true in the oil fields, where purchased power serves to operate thousands of well pumping units and other equipment.

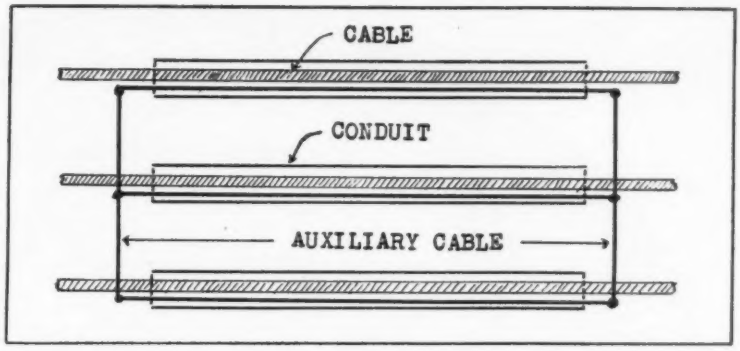
One company, installing 440-volt, three-phase motors in the East Texas field as natural flow subsided, left it to the field foreman to connect the motors and control panels to the utility company's transformers or field lines. In a number of instances these motor-driven pumps were located in low-lying territory, and it was planned to bring the three current leads into each pump house through a buried section of 2½-inch conduit, the ends to be elevated well above flood danger.

When the shipment of conduit went astray, as oilfield shipments sometimes do, the foreman brought in enough one-inch galvanized pipe from the company warehouse to enable him to lay three separate leads into each pump house, and because the one-inch could not carry all three leads, one cable was pulled into each pipe.

As soon as current was turned on, the odor of scorched insulation became evident in the enclosed pump houses. The running of the motors in the belief that this odor would soon be dissipated, resulted in the leads being shorted out by insulation failure in the pipes.

The field foreman, a good pipeliner, had never before encountered the property of alternating current which sets up a magnetic field around the conductor carrying it. When all three conductors of a three phase circuit are contained in a single iron conduit, the magnetic fields tend to neutralize each other. On the other hand, when a single conductor is enclosed in an iron conduit, the magnetic field magnetizes the iron conduit and energy is absorbed from the circuit to supply the eddy current and hysteresis losses that invariably accompanies the magnetization of iron. These energy losses heated the iron conduit which in turn heated the conductors, already hot from their normal current carrying function, with the result that the insulation failed.

Challenged to cure the trouble without resorting to the obvious solution of replacing the three pipes with a conduit large enough to carry all three cables, the field superintendent of an electrical contracting company solved the problem by installing a second smaller cable through each conduit. These three shielding cables were connected together at the ends, as shown in the sketch. Thus connected, the induced currents tended to neutralize the magnetic field in each conduit.



The plan of running auxiliary leads through the conduits did not, of course, absorb all the disturbance set up within the pipe, but did succeed in keeping the heat generated below the danger point for the insulation used.

Had the contractor been called in to install the pumping equipment controls, all lost time would have been avoided, and the cost of several replacements on the cables saved.

Wiring In Old Buildings Financed by EHFA . .

(*Continued from page* 20)

for determining whether or not the job qualifies for financing under this plan.

Utility will satisfy itself from the proposal and additional information if necessary that the wiring is to be in accordance with the required standards as to quality and adequacy.

Contractor proceeds to install the wiring as specified.

Each completed installation will be inspected by the utility or other recognized inspector. If the job is pronounced satisfactory by the inspector, a certificate of installation or completion will be signed by the customer, contractor and inspector, indicating that the work has been completed and the installation is satisfactory.

This certificate will also show the full purchase price of the installation and will indicate that a minimum of 10% of the cost has been paid to the contractor. It will further show the amount of the monthly payments and number of months the note is to run.

The customer then signs a note in favor of the contractor for an amount not to exceed 90% of the total cost of the wiring installation.

The contractor endorses the purchaser's note to EHFA without recourse and receives the face amount of the note, less finance charge, from the utility or EHFA as the case may be.

Asheville Building Industry Holds Annual Exposition .

(*Continued from page* 18)

Over $100,000 worth of display materials showed the latest in household furnishings, electric appliances, radios, refrigerators, office equipment, furnaces, stokers and building materials.

The largest single unit on the floor was that of the Federal Housing Administration where a representative of the government explained how and for what purposes FHA loans could be obtained.

Television made its first appearance in Asheville at the booth of the Freck Radio company. Interested groups of spectators gathered to see pictures transmitted from one machine to a screen some distance away.

Another outstanding feature was the appearance of Electra, the mechanical man, of the RCA-Victor Corporation.

The inter-room conversation equipment displayed by Talman Office Supplies was also new to the local public.

The annual exhibit it sponsored by two local newspapers.

Oklahoma City's new civic center includes four modern buildings all of which are models of modern construction. Adequate wiring and ample lighting are features.

Adequate Wiring and Light Provided in Oklahoma City Civic Center

By Nat M. Johnson
Southwestern Editor

WHEN the first settlers rushed into the mushrooming city of "Oklahoma, Oklahoma," in 1889, they saw two plowed furrows, stretching westward, and a sign reading, "Keep Off—Right-of-Way, Choctaw Railway Co." Like people of today who are denied something, those early settlers thought that was the prize location and many of them staked their claims even on the Choctaw's right-of-way.

The railroad was built. Although the Choctaw passed out of existence, another company extended the original investment until it cost Oklahoma City $4,000,000 to pick up those tracks, figuratively speaking, and move a "terrible nuisance" out of the down-town district to make way for the city's $10,000,000 Civic Center Group.

By means of a bond issue of this amount, the city and county were enabled to purchase the property and to group all city and county buildings in one section, comprising several city blocks. The group, which was completed in 1937, includes county courthouse and jail in one building, municipal building, municipal auditorium, and municipal jail. The buildings, of "modern classical" design, combine beauty with utility.

As would be expected, electrical work in all the buildings is completely in accord with modern requirements of adequacy and provision for the future. That in the auditorium is probably the most outstanding in this respect, according to Chalmer D. Snyder, vice president of Wetherbee Electric Company, Oklahoma City, who handled the electrical installations in the auditorium, municipal building and municipal jail.

Primary service in the auditorium building is provided through three separate transformer vaults. These are interconnected on the secondary sides to provide continuity of service.

The auditorium proper has seating capacity for nearly 7,000 people. The stage has a 56-foot opening. With dressing rooms and storage space below, cubical area of stage is equal to that of a 12-story building, 50 feet by 125 feet.

This stage is said to have the most complete lighting facilities of any in the state. Stage and lighting effects cost nearly $75,000. In addition, provision was made for any special lighting effects that a road show or other performance might require.

The whole auditorium is acoustically treated. Part of the Wetherbee contract was the installation of a sound-reinforcing system which will carry the least whisper or noise from any part of the stage to the fartherest corners of the auditorium.

General lighting in the auditorium is provided by concealed units, operated from dimmer controls. There is a special spotlight booth for stage lighting effects as well as a projection booth.

The total electric load was so great that it was necessary to divide the entire layout into four sections, each section being served from a separate switchboard.

Lighting is controlled by means of a pilot switchboard of the remote control type, utilizing reactance type dimmers.

All border lights are of 500-watts per foot type; footlights are double-row, having a 500 watt unit every 6 inches; color lighting is effected through Pyrex glass lenses.

The proscenium arch is lighted with three special coves, consisting of approximately 500 individual 100-watt reflectors.

All main ceiling lighting units are provided with special dust covers and reflectors which give a pleasing, diffused effect throughout the entire auditorium.

Ceiling of main foyer is constructed almost entirely of structural glass with recessed lighting units spaced evenly throughout the ceiling.

Lighting standards at the main entrance are of cast aluminum with special floodlighting effects. The main standards are ten feet in height and nearly four feet in diameter, the largest ever used for this class of work.

Standards for the side entrances are similar except that they are of Grecian urn design. They serve to floodlight the outside of the building.

On the third and fourth floors of the auditorium building, on both north and south sides, are meeting rooms for conventions and other gatherings. At the front, over the main foyer, there is a convention hall with a small stage.

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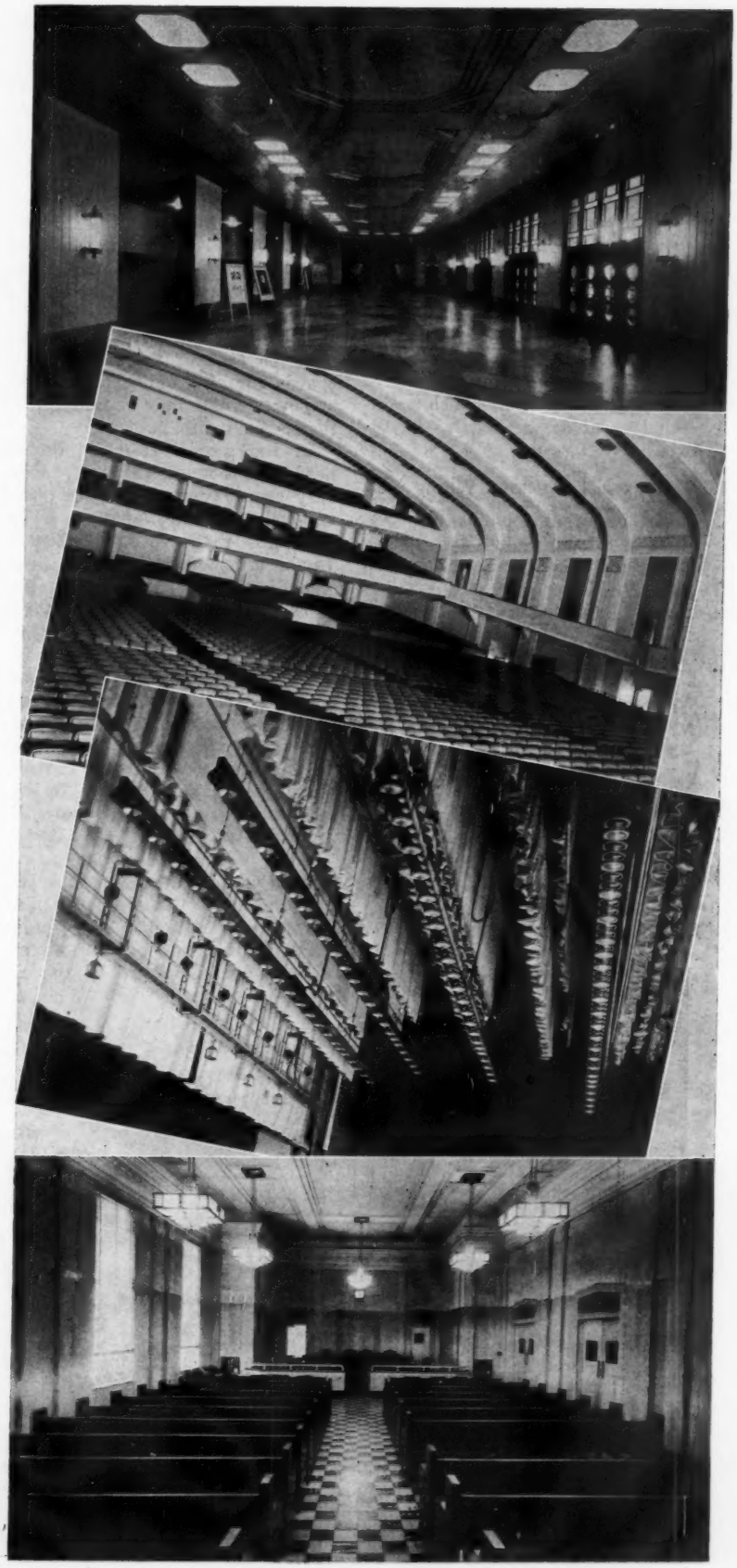


Ceiling of the main foyer of the municipal auditorium shown at the top is constructed almost entirely of glass with light provided by recessed units. General lighting in the auditorium is also provided by concealed units, operated by dimmer control. The auditorium stage is said to have the most complete lighting facilities of any in the South. One of the assembly rooms in the municipal building is shown in the lower photograph . .

This latter room has one side constructed entirely of windows, while the opposite is walled almost entirely with mirrors. Lighting fixtures are of most unusual design in that they are made entirely of glass panels and tubular lamps. There are six of these fixtures, each weighing approximately 1,500 pounds.

On the top floor provision was made for a municipal art gallery. Lighting effects in this room were designed especially for this purpose and utilize Lumiline strips.

Elevators serve all floors. The building, while not air conditioned, has every provision for such an installation at some time in the future.

Special Basement Wiring

The basement combines the features of a banquet hall and display mart with floor area of approximately 38,000 square feet. Other rooms adjacent to the exhibit space, include a large kitchen and dishwashing room, storage rooms for kitchen equipment, mechanical equipment and concessionaires' equipment, switchboard rooms, rest rooms, check rooms, etc.

In the provisions made for the exhibit space in the basement, recognition was given the fact that most spaces of this kind seldom contain a sufficient number of electrical outlets as circuits of sufficient capacity.

This large basement room is provided with 720-watt lighting units at 20-foot intervals on the ceiling, each served from an individual circuit, and a separate circuit supplying four receptacles for every exhibitors' booth space. In addition, adequate provision was made on each of the four switchboards for any additional lighting or power which may be required in the special exhibits.

In the municiual building the needs of the municipal offices were very carefully studied by a board of twelve architects before a design was prepared and accepted. In the accepted design recognition was given the electric installation to the extent that every office contains more outlets than are required for present needs.

The four elevators are of the automatic, selective-call type. Special care was given the design of the lighting fixtures for the various offices and court rooms. In some instances, Indian designs in cast aluminum were worked into the lighting fixtures.

This building is connected with the city jail building both by telephone communication and a special circuit run for broadcast of police radio calls. The police radio station is owned jointly by the city and county.

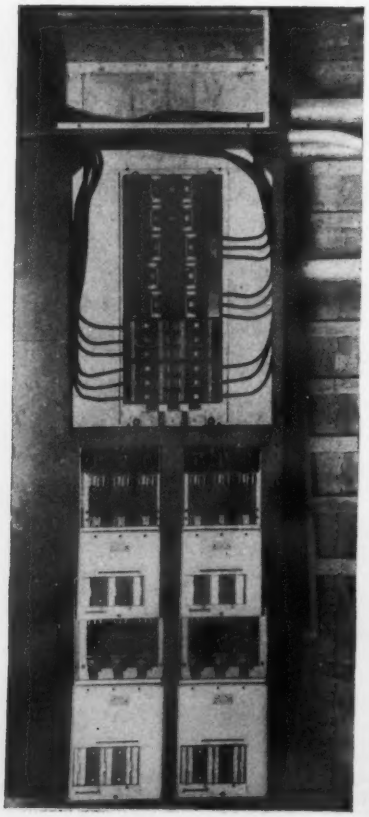
Portable Welding Machine For Contractors . . . .

By Jack Beater

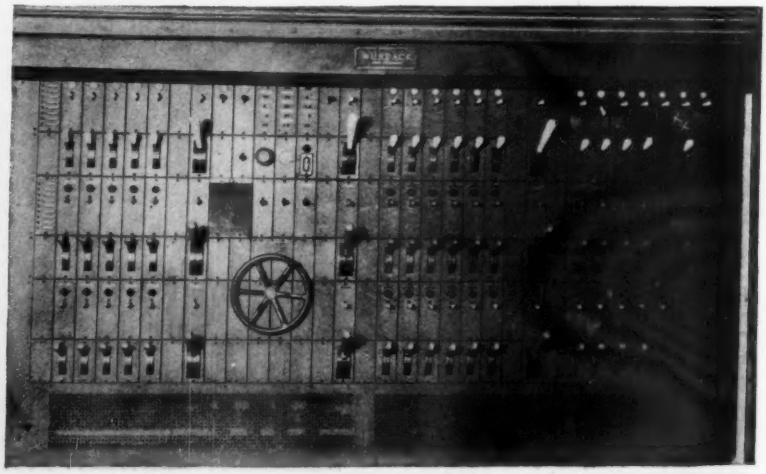
ONE of the handiest tools that has ever been offered to the electrical trades is the newly developed a-c arc welder. Hardly any larger than a table top radio set, it will weld and braze a variety of metals without the use of a motor or generator or any other moving parts. All that is needed to go to work is a 220 volt, single-phase electric outlet. The welder case is mounted on wheels and can be rolled to any part of the shop on a moment's notice.

The motor shop can find many

(*Continued on page* 32)



At left is shown a typical distribution panel board of the type used throughout the buildings. Below is the pilot switchboard of the remote control type used in the auditorium . . . . . .



Engineering

IN THIS SECTION:
Low Protective Ratio Arresters Installed
System Planning Development
Progressive Steps in Capacitor Manufacture

Low Protective Ratio Arresters Installed

LIGHTNING arresters of the highest voltage class, using a new construction providing a protective ratio of 2.1 have been installed at the Riverside Station, Baltimore, Md., of the Consolidated Gas Electric Light and Power Company to provide protection to a 126,000 kva, 230-kv, solidly grounded neutral transformer bank.

Limiting the surge voltage that can be impressed on apparatus to 2.1 times the normal value (for a 1500 amp. discharge) instead of 2.5 times normal is an advance in protective equipment of the first magnitude.

With such an arrester a 220-kv transformer for ungrounded service, for example, will have to withstand only 720 kilovolts instead of 855 kilovolts. This advantage can be utilized either as an extra measure of protection or less insulation need be given to the equipment. Either has definite dollars and cents value.

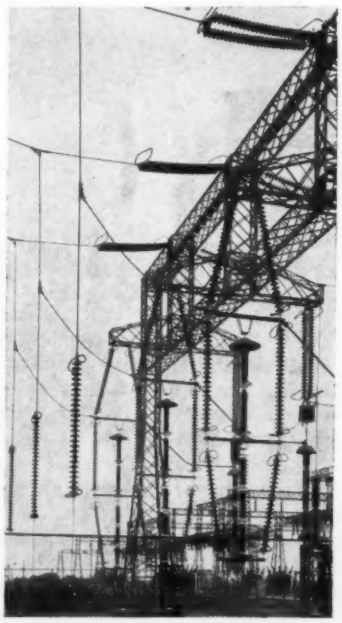
The principal change in arrester construction contributing to this improvement is a new type of auto-valve block made of silicon carbide and sodium silicate. This block has a low protective ratio and can discharge heavy surge currents. Currents as high as 100,000 amperes flowing for approximately 25 micro-seconds have been handled by these blocks without damage.

The new blocks have a further important advantage. Not only do they have a better protective ratio at the standard test surge currents of 5000, 10,000, and 30,000 amperes which lightning is capable of discharging into the line, but there is much less increase in the protective ratio.

Two gaps are used, a quench gap and a switch gap.

When the surge voltage reaches about 150 per cent of maximum line-to-ground voltage rating of the arrester, the switch gap breaks down and the entire voltage is applied to the quench gap. If the voltage continues to rise, the quench gap breaks down when the voltage reaches 175 to 200 per cent of the maximum line to ground arrester rating. The surge is then discharged through the auto-valve blocks.

After the surge is discharged, the normal frequency current of approximately 20 amperes crest passed by the auto-valve blocks is interrupted at the first current zero by the quench gap. The leakage current of less than a milli-ampere passed by the quench gap shunting resistors is then interrupted by the switch gap.



Low protective ratio arresters installed recently at the Riverside Station, Baltimore. (Westinghouse Photo).

Cathodic Protection Generators Prevent Electrolysis

One of the interesting exhibits at the tenth annual convention of the Petroleum Industry Electrical Association in Houston, Texas, recently, was the cathodic protection generator utilized to prevent electrolysis of pipe and cable lines.

The direct-current generators are placed in nests at a distance from one another of a quarter of a mile to five miles and the nests are located a distance of about 400 feet from, and parallel with, the pipe lines.

The negative side of the generator is attached by a copper wire to the pipe lines and the positive side to buried heaps of scrap iron. This arrangement results in a flow of current from the buried heaps of scrap iron to the pipe lines and prevents deposition of metal from the pipes. The electrolytic action eventually destroys the beds of scrap iron but the pipe line remains in sound condition.

E. M. Smith, United Gas Pipe Line Company, Houston, and vice president of the Association, presided over the meeting in the absence of P. F. Davis, of Tulsa, president. The convention enabled petroleum electrical engineers to get together and compare notes on the latest developments of their business.

Chairman of Chattanooga Power Board Tenders Resignation

Colonel Harold C. Fiske resigned as chairman of the Chattanooga Electric Power Board, effective May 1.

No action has been taken concerning a new chairman but L. J. Wilhoite has been named vice-chairman to serve as head of the board until the chairmanship vacancy has been filled.

System Planning

IT WAS a good many years ago that electrical engineers began to find out that power stations, transmission lines, substations and distribution circuits, all of which in themselves were of perfectly good design, would not always function satisfactorily when connected up together in an integrated power system. It was then that the necessity for system planning began to be realized.

IN THE earlier days of system planning, the engineer was confronted chiefly with developing capacity of the system fast enough to serve the rapidly growing loads, while at the same time making that system operate with a reasonable degree of reliability so that interruptions to service would not be excessive.

The apparatus which was available for his use was in many instances untried and its performance was generally uncertain, while at the same time many problems of system performance were unsolved.

Today, however, the growth of load is much slower, and the advances in equipment design and technical knowledge have solved the major problems of satisfactory power system design. In this situation the planning engineer today is concerned chiefly with the economics of system design and his main objective is to obtain the maximum possible capacity for each dollar spent in the development of the power system.

However, let us first review briefly the essential technical factors of system planning.

Planning of power system development, commonly called system planning, means making provision for the orderly development of the physical power system in accordance with the company's business requirements and financial resources. It assures the maintaining at all times of the proper relation between investment and earnings, adequate and timely provision for new business, and a high order of efficiency in the expenditure of dollars for system investment.

Advantages of System Plan

System planning deals with the power system as a whole, as contrasted with consideration of its separate parts individually, as in the design of a station or circuit. The advantages of system planning come chiefly from the consistent application of the principles of a master plan to the step-by-step development of the system, and from the more complete knowledge of loads, earning power, system capacity, and operating requirements that result from the studies and analysis that are an essential part of a system planning program. Contrary to an opinion sometimes expressed, the accurate long range forecasting of the rate of growth and probable location of future loads are relatively unimportant.

(Copyright, Blank & Stoller)

By E. C. Stone
Vice President and General Manager
Duquesne Light Company

The tangible results of system planning are reflected in the improvement budget. The financial estimate upon which this budget is based covers expected revenues, operating expenses, net earnings, and proposed investment. It thus presents to the executive a complete picture of the operating results to be expected during the period covered, and sets up for each department a goal to be striven for.

The description of the projects recommended in the budget to provide necessary additions and replacements to the power system, constitute a complete specification of the system requirements both for new business and to maintain adequate service during the period covered.

Organized system planning should not cost more than approximately 1% of the cost of the system planned.

Organized system planning accomplishes many results which make for more system capacity per dollar of investment. Some of the more important of these are as follows:

Complete and intelligent control of expenditures for system development is maintained at all times.

The existing power system is more efficiently utilized.

Additional capacity is obtained at a lower unit cost.

Additional capacity is more closely fitted to the requirements, both as to amount and time of installation.

Present investment is carefully conserved, replacements being made only when clearly justified by service conditions or economics.

New investments are made in accordance with a definite plan so that longer life of plant may be expected. Premature replacements are confined more closely to those economically justified by advances in the art.

In general each new project undertaken is decided upon only after most careful study, both of the necessity for it, and of the best means of obtaining the desired results. Its relative importance in relation to other desirable projects is also established, competitive se-

Adapted from an address presented before the 5th Annual Conference of the Southeastern Electric Exchange, Edgewater Park, Mississippi, April 21-23, 1938.

lection of projects to be executed being an important factor in obtaining the greatest possible return from money expended.

System planning logically embraces three lines of work as follows:

(1). Estimate of future loads to be expected and proper amount of expenditure for system development.—This work includes analysis of present and past loads and system load characteristics, load surveys and estimates of future growth, studies of revenue, operating expenses and earnings available for return on investment, analysis of earning power of new investment.

(2). Development of a master plan of system design.—This work covers the basic design for the development of the power system, including scheme of connections, adoption of system voltages and limits of voltage regulation, control of abnormal transient voltages and currents, electrical stability, selective relaying, etc., and establishes the fundamental principles under which the system is to be developed.

(3). Compilation of periodic improvement budgets. — This work includes determination of the location, capacity, and time required for placing in service of new stations and lines and sets up the exact scope and estimated cost of each project to be undertaken.

The limited space available makes it necessary to confine the scope of this discussion to consideration of the master plan. The master plan will take the form of a skeleton design for a power system to supply the estimated ultimate electric loads to the territory to be served.

This plan will be built up around a scheme of system connections designed to transmit power from sources to load by the most economic route, to satisfy the requirements for multiple sources of feed and reserve capacity necessary to meet the established standards of service, to be capable of almost indefinite expansion and to be so set up that apparatus installed in accordance with it should not be outgrown within a few years, but should be adequate to remain in service a reasonable life regardless of how much or in what direction the system grows, unless replacement is justified on economic grounds because of advance in the art.

The master plan establishes certain fundamental principles under which the system will be developed. The most important of these are as follows:

Basic Principles Established For Master Plan

Definite standards of service covering requirements for system frequency, for service voltages, both under normal and transient conditions, and for continuity of supply.

Appropriate methods of supplying the various classes of customers, such as "loop feed" at high voltage for large industrials, low voltage network for districts having high load density, radial systems of moderate voltage for residential areas, and so on.

Scheme of connection under which multiple feeds and reserve capacity at load centers, both for routine maintenance and to properly insure service against interruptions in accordance with established service standards are furnished with the least number of reserve parts and the least kilovolt-amperes of reserve capacity.

Standard rated voltages for the various parts of the system, standard ratios of transformation between systems of different voltages, and appropriate limits of voltage regulation.

Limitation of short circuit current to values which may be safely handled, and which will not materially change as the system grows.

Standardization of capacities of transmission lines, distribution circuits, transformers, oil circuit breakers and other apparatus in accordance with sound economics on the basis of size of system and reserve requirements.

Simplicity of switching facilities in stations, as a result of the carefully worked out scheme of connections.

Limitation to safe values of abnormal and transient voltages arising from arcing grounds and internal surges, and as far as possible of voltages due to external lighting.

Definite plans of operation for maximum system stability and for limitation of disturbances due to abnormal conditions, such as "loose link" plan, "radial group" plan, or "synchronized at load" plan.

Provisions for interconnection with adjacent systems to take advantage of load diversity and coordinated plant development.

Suitable schemes of relaying for selective isolation of breakdowns.

Adequate factors of safety both electrical and mechanical for all parts of the system, based on system characteristics as established above.

Provision for step by step development so that investments may be kept in proper relationship to earnings, and additions to capacity will be of such magnitude as will be absorbed by growth of load within relatively short periods.

Provisions for utilization of existing plant wherever possible and replacements only when necessitated by service requirements or sound economics.

Service Continuity Requirements Of the Power System

A major problem in the evolution of the master plan is found in the service continuity requirements of the power system in relation to the susceptibility of every part of the system to failure. A substantial proportion of the capacity of the power system is thus absorbed in insuring against service interruption.

At the beginning of the last decade continuity was not consistent with the greatest use of electric power. Since that time reserve capacity for breakdowns has been steadily increased and at the same time failures have been greatly decreased by improvements in practically all component parts of the system. In some cases the total duration of outages has been reduced 90 per cent.

Obviously a study of this problem with a view to close adaption of system capacity to the loads carried, within limits of specified service standards, is a very important factor in the economy of system design.

●

The concluding section of this article, which will appear in a following issue, will discuss service continuity requirements in relation to the susceptibility of every part of the system to failure.

Protecting Outdoor Substations . . .

By S. H. Coleman

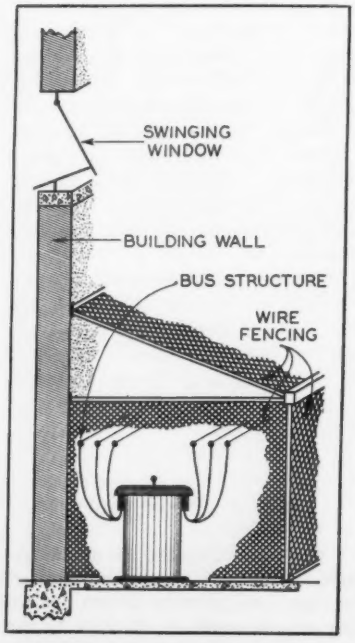
WHEN laying out the electrical distribution systems of industrial plants, designers should locate outdoor substations and transformer banks some distance away from the walls of building so that the danger of an interruption caused by falling objects is minimized.

This precaution is especially necessary where the walls contain windows. The importance of proper location can best be emphasized by the description of two recent electrical failures that occurred in a large chemical plant.

In one instance, a wire barrel hoop carelessly dropped from an open window directly above an important substation, fell across the exposed high voltage bus. The resulting arc so damaged the bus structure that a prolonged service interruption was necessary to effect its repair.

Shortly after this failure a similar accident occurred. In this case, an accidentally dislodged tile forming part of the caping of a building parapet fell, and made a direct hit on a transformer bushing. This started a fire that practically destroyed the transformer.

Should it be necessary to install outdoor equipment where there is any possibility of its being damaged from above a protective screen should be provided. This guard must have sufficient strength to break the fall of any object which might conceivably drop upon it. As shown in the sketch, this protection can be made an integral part of the grounded safety fencing surrounding the equipment.



Method of protecting substations built near walls of industrial plants . . .

New Operating Superintendent For Carolina Utility . . . .

H. Burton Robinson has been named operating superintendent of the Carolina Power and Light Company at Raleigh, N. C.

He will have direct charge of all the company's generation, distribution and transmission of power.

Portable Welding Machine For Contractors . . . .

(*Continued from page* 28)

uses for an efficient yet low priced welder, such as in the repair or field frames, end bells that are cracked or broken, reconditioning rotor fans, and installing special bases on motor housings.

To the electrical contractor, the simple a-c arc welder opens many material and labor saving possibilities. Since an outfit of this type will handle anything from thin sheet metal to heavy castings, it can be used for constructing special or fancy lighting fixtures, ventilating fan standards or mounting brackets, for forming large size rigid conduit into necessary angles, fabrication of metal boxes, special brackets, etc.

The electric refrigerator service shop will find such a welder a time and money saver in building or rebuilding compressor bases, coil supports, repairing broken castings, assembling fans and pulleys, and for a hundred and one other uses.

A-c arc welder units come in several different sizes. The larger the unit, the heavier the work that it will handle. Where all types of work are to be done, the larger unit is the most practical as the largest unit can be adjusted to do the smallest work, but the small units have a definite limit to the weight of the metal they can handle. Even the large units are moderate in prices and will earn their cost within a short time even if kept only partially busy.

The main part of any a-c arc welder is, of course, the transformer. The unit used by the writer houses a transformer that will work at full capacity hour after hour without any sign of heating. The coils are wound with rectangular wire, are heavily insulated, well ventilated, and are mounted on a heavy riveted core. Control of the arc is obtained by means of a plug and socket arrangement on the front panel. There are five plug stages and six heat ranges for each stage, making thirty graduated heat stages in all.

Special welding rods must be used with the a-c type of arc welder. These rods are coated with chemicals which aid in maintaining the desired arc between the welding rod and the work. The coating on the rod shields the arc from the surrounding air and prevents rapid oxidation.

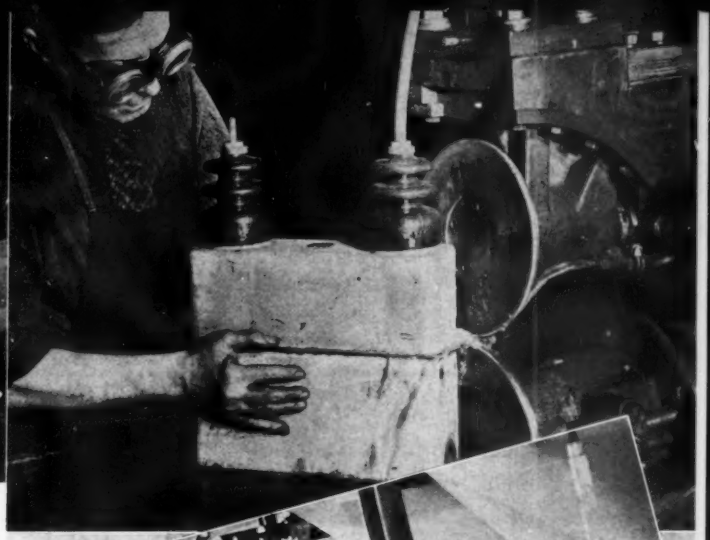
The money spent by the average shop in a years time for outside welding will probably pay for a good a-c welder. In addition to this must be figured the value of the scrap material that can be salvaged, the revenue that can be derived from custom welding, and the special tools and equipment that can be made for the shop.

Construction Started On New Shreveport Plant .

Permit for the construction and equipping of an additional plant at the Arsenal Hill properties of the Southwestern Gas and Electric Company, Shreveport, La., was issued early in May. The addition, which will be built on Allen Street in the northeast section of Shreveport, will cost slightly more than a million dollars.

The new plant will include a 15,000 kilowatt turbo-generator; a cooling tower with 22,000 gallons capacity; two new boilers with a combined heating surface of 20,000 square feet; and a condenser with 20,000 square feet of surface. Excavations for the cooling tower are now being dug and the entire plant is scheduled for completion by September 1, 1938.

Sargent and Lundy, Inc., Chicago, were architects for the new plant, which will be constructed by L. E. Myers Company of Chicago.



A LARGE number of utilities have installed capacitors during the last few years, with savings which in many cases have paid for the equipment in a year or less.

The installation of the capacitor equipment usually involves a careful comparison between the savings to be realized by its use and the investment required.

It is obvious that the longer a capacitor serves, and the less it costs to operate, the greater will be the return realized on the original investment.

Great care in manufacture is required to assure a high quality capacitor. Some of the interesting details in the manufacturing process are shown in the accompanying photographs.

In initial assembly the rolls from the winding machines are grouped and compressed so that two retaining bands can be slipped around them.

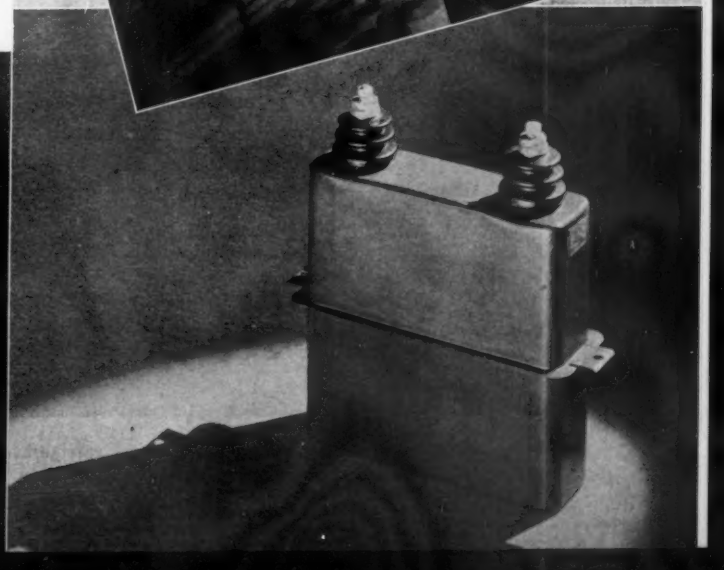
A single continuous weld joins the two halves of the case. Automatic Thyratron control of this resistance-welding process provides the strongest and tightest joint that can be obtained.

Accurate adjustment at the wet end of the paper machine results in uniform formation and gives thorough control of the thickness and other physical characteristics of the finished sheet.

The foil and paper are wound together in these specially designed machines—so many turns per roll. Good mechanical alignment between foil and paper is essential.

Next, two showers of Glyptal for the complete and tested unit. At lower right, a finished 15-kva, 2300-volt unit is ready for shipment.

(All Photographs Courtesy General Electric Co.)



APPLIANCE Service

Practical Method of Cleaning Coils . .

By Allen Parker

A FEW years ago when refrigeration equipment was sold as replacement for old equipment, a complete new job was usually installed. However, with the advent of the dry coil with cross fin area, the replacement of coils has been greatly reduced.

Since most of the early installations used sulphur dioxide and since many manufacturers now use freon, it is usually necessary to adapt older coils to the new type of gas when new equipment is installed to operate with old coils.

One of the principal problems that confronts the service firm making an installation of this kind is that of economically cleaning the coils preparatory to changing their operations to a different kind of gas. Obviously, a method that permits the cleaning of such coils without removing them from the display case and reinstalling them would be most desirable and would save a great deal of labor.

After giving the problem considerable study, we have developed what we have found to be one of the quickest and most effective methods of getting the greatest part of oil and sludge cleaned from these coils in a single operation, especially on continuous tube coils.

The first step in this method is to soak a piece of chamois skin in refrigerant oil until it is well saturated, after which a piece is folded into a wad large enough to form a tight fit in the tubing at one end of the coil. The coil is then connected direct to a drum of carbon dioxide gas and when this high pressure is released against the chamois, it is forced immediately through the entire length of the coil bringing out the sludge and residue, and leaving the coil quite clean.

This method is now being used frequently and is proving most satisfactory. However, good judgment should be used in applying it. The coil that is badly corroded or has the appearance of not being able to take excessive pressure should not be subjected to this method. Workers should avoid the discharge end of the coil when pressure is applied. Should a restriction stop the chamois, a reversal of connections will bring it back to the starting point.

After a coil has received the above treatment, it should be washed out with carbon tetrachloride and dehydrated.

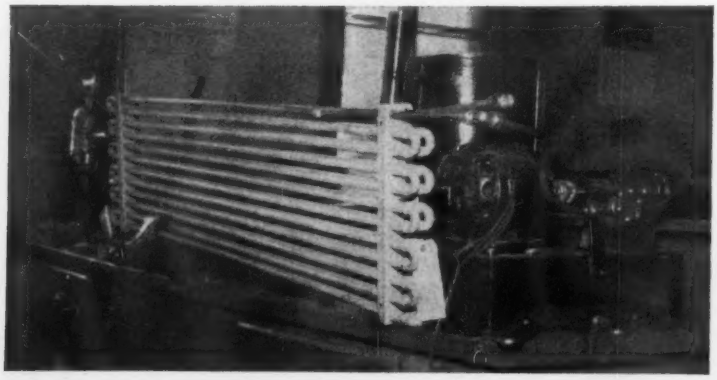
To circulate this final cleansing solution, we have improvised a pump of special design. Incidentally, this pump has proved very useful in doing a complete cleaning job on coils which cannot be cleaned by the chamois method.

The pump was made by mounting a small centrifugal pump, from a domestic washing machine, directly to the shaft of a 1/6 hp motor, both pump and motor being fastened to an old refrigerator condensing unit base.

An auxiliary tank to hold the cleansing fluid was cut from one end of an old water heater tank, and mounted on the base with the pump. The tank is open at the top and serves as a supply and receiver for the circulating solvent.

When we encounter coils upon which we cannot use the chamois method and which contain a great deal of sludge, we use a cheap solvent for the preliminary work. We have found that mineral spir-

(*Continued on page 37*)



An improvised pump and tank for use in cleaning refrigeration coils with solvents such as mineral spirits and carbon tetrachloride . . . .

Appliance Service Hints

In brazing copper and brass fittings, where a harder metal than 50-50 solder is required, I have found phos copper to be very satisfactory. It has a melting point approximately the same as silver solder, does a good job, is easy to handle, and is economical. It can be worked very easily with a regular portable Prest-O-Lite torch. Borax is a good flux for use with it.

* * *

We have occasion to recondition quite a few electric ranges, and one of our labor problems in the past has been that of cleaning the burned grease from the oven inner liner.

After experimenting with several solutions, we have found a method which is proving very economical and satisfactory. A cloth well saturated with household ammonia is placed over the surface to be cleaned and left over night. When cloth is removed, the burned grease will have been softened so that it may be removed easily with a putty knife.

* * *

Many service men dislike the old familiar neutralizing solution of lye and water for use in purging gas from sulphur dioxide refrigerating machines because of its hazard to safety. I have found household cooking soda (bicarbonate of soda) and water a good substitute. A pound of soda will neutralize a half-pound of sulphur dioxide.

MOTOR Service

Laying Out Winding Diagrams . . . . .

By Jack Beater

MANY an expert motor winder through long years of practice can lay out a three-phase winding without taking the time to draw a diagram showing the coil group connections. However, for the novice, it is almost essential to plan a diagram in advance of the actual work.

In the following discussion, we will consider a step-by-step method of laying out a diagram for rewinding a simple 4-pole, three-phase, single-path star-connected winding. This is probably the most common type in the smaller motors, and one that comes frequently to every winding shop. Planning diagrams for motors with more poles or with more paths are prepared in the same manner, but more attention to details is required.

The first step in laying out a three-phase diagram is to draw a series of heavy lines in a circle, each sector of the circle representing one coil group of the finished winding. In the case of the winding under consideration, there will be twelve divisions in the circle. This figure is arrived at by multiplying the number of phases by the number of poles. The outline for this winding will appear as shown in Figure 1.

The next step in preparing the diagram is to indicate the direction of current in each group. We know that sixty-cycle alternating current reverses its polarity alternately 120 times per second, but at any given instant there will be a very definite relation in the polarity of each group with respect to the others. So far as planning the diagram is concerned, we might consider the relative polarity of the coil groups as though they were energized with direct current. If we can make our diagram check out correctly in this manner, the winding will operate correctly when energized from an a-c source.

The direction of current flow for each group is indicated on the chart by drawing in an arrow on the segment representing that group. These arrows must alternate—the first pointing in one direction, the second in the opposite direction, and so on around the circle. This second step is shown in Figure 2.

The third step in laying out our diagram consists of drawing in the connections for one phase winding. Since there are three phases to be considered, they are usually lettered, "A," "B," and "C."

Tracing the Circuits

We start by tracing in the path of phase A. From the line lead phase A will go direct to the first group. In leaving the first group, it will skip the next two groups, reserved for phases B and C, and will pass on to group number 4. Here the flow of current must be reversed in order to coincide with the proper instantaneous polarity indicated by the arrow, so we enter on the far side of the group and leave on the near side.

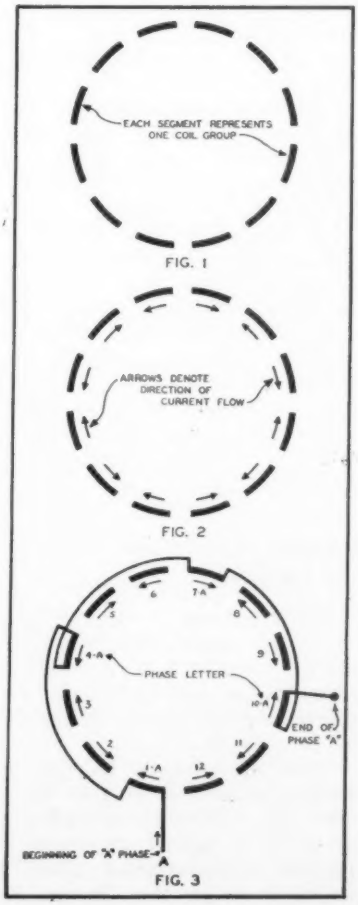
From group 4 our line moves on to group 7, entering on the near side and leaving on the far side. After group 7 the line passes to the far side of group 10, so as to reverse the flow of current, and leaves from the near side. The circuit now passes to the outside of the chart where we shall leave it for the moment. The complete path of the A phase is shown in Figure 3.

In a similar manner, we repeat this operation for B phase, starting with coil group 2. As in the case of the A phase winding, each coil group is entered on the near or far side, as the coil is approached in a clockwise direction, according to the polarity indicated by the direction of the previously drawn arrows. The same operation is repeated for C phase, beginning with coil group 3.

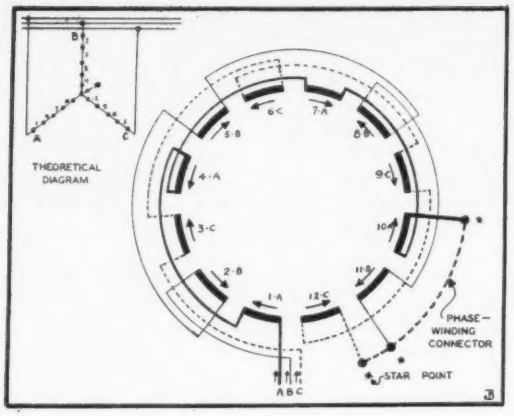
In order to make the winding diagram easier to follow, we usually draw the A phase with a heavy black line, the B phase with a thin black line, and the C phase with a dotted line. Many winders, when laying out the more complicated diagrams, use a different color ink or pencil for each phase circuit. However, some method of identifying the phases readily is to be recommended. The diagram as it will appear when all three phase windings have been drawn in is shown in Figure 4.

Star Point Connections

We now have each of the phases complete as far as the coil connections are concerned but we still have one more important connection to make. To complete the winding operation, these ends must be connected at a junction point commonly known as the "star point." In practice, the junction is usually made with a wire known as a "phase winding connector." Figure



Figures 1 to 3 show first steps in laying out a four-pole, three-phase, single-path star winding . . . . .



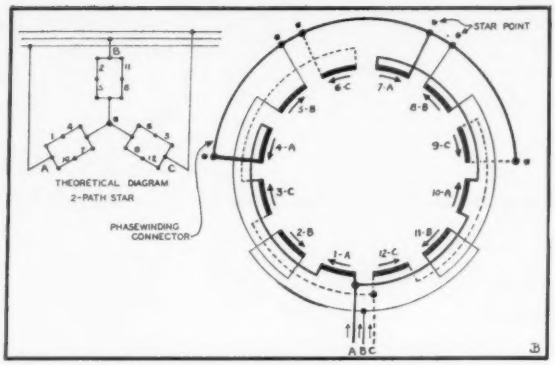


Fig. 4. (Left) Completed wiring diagram for 4-pole, 3-phase, star winding. Fig. 5. (Above) Similar diagram for 2-path star winding.

4 shows this phase winding connector in place, and also a theoretical diagram of the same winding in which this junction or star point is clearly shown.

For delta-connected motors, we prepare a winding diagram in the same general manner as for the star winding. The placing of the coils is the same, the connection of the individual phase circuits is practically the same, but the method of making the phase connections differs materially. However, the two diagrams are so similar that when either one is understood the other is easily mastered.

Diagrams for three-phase motors having 6, 8, 12 or more poles, if of one-path, are layed out in a manner very similar to that described for the 4-pole motor. However, when more than one path is used each phase winding is split into sections, and these sections are joined together electrically by the proper use of a phase winding connector. Figure 5 shows the diagrams of a three-phase, 4-pole, 2-path, star-connected winding. In this diagram, the changes necessary for 2-path connection are plainly shown.

Unusual Motors For Oil Refinery . . .

The first two motors of their type and construction, involving one of the most unusual induction motor devices ever built, have been constructed by General Electric for oil refinery service.

These are two-pole, 50-cycle induction motors, rated 1000 hp at 3000 rpm. Inasmuch as such size of motor is beyond the range of labelled explosion-proof Class I, Group D design, these motors are provided with a closed-circuit system of ventilation incorporating surface air coolers for removing heat, as well as a valve arrangement for continuously injecting a small amount of inert gas.

These features, together with tight enclosures and special seals, provide the operator with a complete arrangement for maintaining a non-inflammable atmosphere, slightly above atmospheric pressure, within the motor.

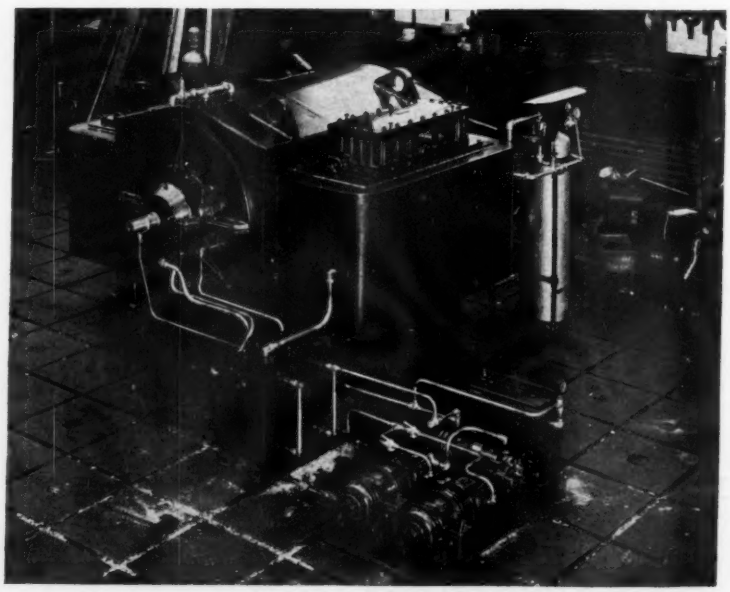
The closed-circuit cooling system, which is unusual for high-speed induction motors, involves directional ventilation: highly efficient propeller-type fans designed in the General Electric research laboratory force the inert mixture over the motor windings through ducts, and thence through surface coolers which extract the heat before the mixture is again circulated.

A forced-feed lubricating system furnishes oil to the bearings under pressure by means of two pumps. These pumps operate continuously to maintain a liquid seal at the bearings at all times.

Emergency Repairs For Brush Lifting Type Motors . . . .

By G. H. Mitchell

On several occasions I have encountered single-phase repulsion-induction motors equipped with a brush-lifting arrangement for starting which when worn causes the spring barrel ring to wedge and hold the short circuiting segments



An unusual motor constructed by General Electric Co. for oil refinery service. It is rated 1,000 hp at 3,000 rpm. A non-inflammable atmosphere is maintained inside case with inert gas . . . . . .

at a point where the armature is short circuited when the motor stops.

In a case of this kind, if the switch is closed again under these conditions to start the motor, the motor will not start, and if it is improperly fused, there is danger of its burning out, especially when used with an automatic switch.

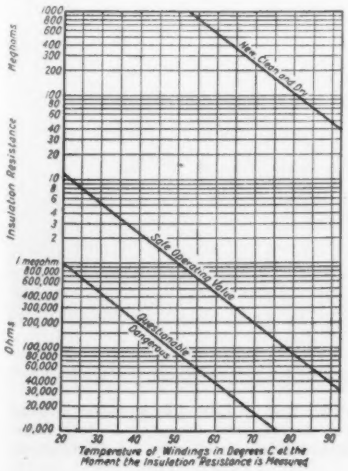
To remedy this condition when no new brush holders and parallel fingers are on hand, remove the commutator end housing, take off the brush holders, and with a pair of diagonal cutters cut the end of parallel finger off so that the spring barrel ring will not contact it.

The motor will then operate perfectly but brushes will ride upon the commutator all the time. Of course, this action may result in brush chatter and wear of both brushes and commutator, but it will provide a temporary means of operating the motor.

Insulation Resistance Guide To Motor Condition . .

The measurement of insulation resistance of motor and generator windings is still the most practical way of obtaining a true indication of the actual condition of the insulation.

Such measurements may be made either with a megger or an ohmmeter. The resistance should be measured at a temperature approximately equal to the normal operating temperature of the motor. The importance of this latter fact is indicated by the accompanying chart which shows how rapidly insulation resistance drops as the temperature of the winding increases.



The upper line in the chart shows the approximate value of insulation resistance when new, clean and dry. Other lines in the chart indicate the proper range for safe operating values and values at which operation becomes dangerous.

High Speed Babbit and Torch Facilitate Bearing Work . .

How savings may sometimes be effected in the work required to reline bearings in heavy motors is given by G. R. Cottrell, proprietor of the G. R. Cottrell Electric Company, Sheffield, Ala.

Where the bearings are not too badly worn, he finds that he can build them up by applying high speed babbit metal with a light tip welding torch. The surface of the bearing is built up about one-fourth inch and then rebored to the correct size.

Mr. Cottrell said he had used this method on several bearing relining jobs for motors for cotton gins and small industrial plants with complete satisfaction. The operation is much simpler than where all the old bearing has to be reamed out and built up in its entirety. It can also be done more quickly which means that the motor is kept out of operation less time, and that is quite a factor where small plants have no standby facilities.

A new series of motor rewinding articles by A. C. Roe, railway motor engineer, Westinghouse Electric and Mfg. Co., will begin in this section in July.

Method of building up bearings that are not too badly worn by means of high speed babbit metal and light tip welding torch . . . . . .

Practical Method Of Cleaning Coils . .

(Continued from page 34)

its, which can be purchased at any local oil company at a very economical price, will do the job very nicely. After initial cleaning with this solvent, the coil is given a final rinse with carbon tetrachloride.

After a coil has been cleaned out, it is necessary to dehydrate it before placing it again to service. Since the cleaning methods we use do not require the removal of the coil from the box it is impossible to dehydrate the coil in a bake oven.

Our method is to place two or three electric spot heaters or space heaters in the box, with doors closed, which soon raises the temperature. While the temperature is up, we connect an evacuating pump (if this is not available, an old domestic refrigerator compressor will serve) discharge line to the liquid line of the coil, leaving the suction line open. And to the suction line of the pump we connect a refrigerant dryer. We have found it best to charge this dryer with calcium oxide.

The pump is operated under this setup for several minutes, which passes the air through the dryer reducing its moisture content and then draws it through the hot coil where it absorbs moisture, thereby drying out the coil.

To complete this process, we disconnect the pump and plug the liquid line, and reconnect the pump to the suction line. We pull a complete vacuum on the coil while tracing the liquid and suction line with a heated blow torch. We then balance the pressure in the coil with gas.

POWER COMPANY News

Utility Board Votes Property Sale . . . .

CLIMAXING negotiations begun nearly five years ago, the directors of the National Power and Light Co. voted to sell their interests in the Knoxville area represented by its subsidiary, the Tennessee Public Service Co., to the City of Knoxville and the Tennessee Valley Authority. The utility board's action was announced May 19, after TVA and Knoxville authorities raised by $400,000 their offer of $7,500,000 made a week before.

The purchase price of $7,900,000 does not include the street railway system operated by the Tennessee Public Service Co. Nor does it include a transmission line from Waterville to Kingsport. It is reported that private interests are seeking to buy the transportation system and that the American Gas & Electric Co., like National Power & Light Co., an affiliate of the Electric Bond & Share Co., will take over the transmission line.

An *Associated Press* report credits Malcolm Williams, engineer for the state utilities commission, with the statement that "total assessed valuation on all properties of the Tennessee Public Service Co." had been set at $8,600,000.

Other Acquisitions

Two other major utility acquisitions in the TVA territory are still pending. For more than a month, Paul B. Sawyer, president, National Power and Light Co., has been in Memphis in connection with the city's interest in the purchase of the facilities of the Memphis Power & Light Co.

The principal negotiations involving TVA and private systems are those for the sale of properties of Commonwealth & Southern Corporation comprising all of the system of the Tennessee Electric Power Company, and parts of the Mississippi Power, Alabama Power and Georgia Power Companies.

M. J. O'Connell New President of Virginia Public Service . .

M. J. O'Connell, recently elected president of Virginia Public Service Co., Alexandria, Va., has long been identified with electrical activities in the South.

His career began as an electrical worker in the Newport News shipyards. In 1911, he bought and modernized a plant at Warrenton, Va., changing it from direct to alternating current without cost to consumers. He also expanded service to Marshall, The Plains, and Remington.

He helped in the consolidation of ice and electric plants forming the Virginia Northern Ice Co. and the Virginia Northern Power Co., of which he became president.

His first association with Virginia Public Service was in 1926, when he became a vice-president. In 1930, he went to Salisbury, Md., as vice-president and general manager of the Eastern Shore Public Service Co.

In 1933, he was called in as a receiver of the Columbus (Ohio), Delaware, and Marion Electric Co. Two years later he lifted the receivership with no loss to any creditor or shareholder.

In 1936, he became vice-president of Utility Management Corp., New York, in which post he was sponsor for Virginia Public Service Co., Eastern Shore Public Service Co., Dover Gas Co., and the Tidewater Power Co.

M. J. O'Connell

Sales Executive Promoted

C. L. Osterberger, formerly merchandise manager for Louisiana Power & Light Co., Algiers, has been made general sales manager.

Mr. Osterberger was appointed merchandise manager a year ago.

The Baton Rouge Electric Co., which supplies light and power to Baton Rouge, La., recently moved to new quarters where office, display and service facilities have been greatly increased.

The new showroom, a portion of which is shown here, is lighted by means of indirect units that provide a high level of illumination. Refrigerators, ranges and other major appliances are arranged in attractive displays, and smaller appliances are displayed on attractive lacquered tables.

ASSOCIATION Activities

Wiring And Lighting Course Sponsored In Florida . . .

OUTSTANDING in the promotion of the National Adequate Wiring Program in the South is the eight-week adequate wiring and lighting course now being conducted in Miami, Florida, through the cooperation of the Florida Power and Light Company, the Florida State Association of Electrical Contractors and Dealers, and the South Florida chapter of the Illuminating Engineering Society.

The purpose of the series of meetings is to present new concepts and knowledge in the art and practice of wiring and lighting for the Florida electrical industry and allied professions. The first meeting was held April 21 and meetings are scheduled for one evening each week until the concluding meeting to be held June 9.

The following topics are representative of those scheduled for presentation: The New Science of Seeing, W. H. Davidson; Adequate Wiring, Its Need and Design, Geo. C. Kinsman; Advances in Wiring Practice, E. C. Knox; What is the Handbook of Interior Wiring Design? A. C. Bergh; Fundamentals of Illumination, H. M. Horton; What's New About Light Sources? D. B. Clark; Residence Wiring and Lighting Design, I. L. Murray; Light as an Advertising Medium, W. H. Davidson; Standards of Wiring for Commercial, Industrial and Apartment Buildings, C. V. Booth; New Equipments and Methods for Merchandising with Light, Chas. H. Burch; Poor Wiring and Overloaded Circuits vs. Adequate Wiring and Normal Efficiency, J. A. Banton; The National Adequate Wiring Program, J. H. Keele; What's New in Wiring Devices? F. S. Goodell; and The Electrical Industry's Responsibility in the New Home Movement, R. B. Roberts.

Davis Addresses Roanoke Promotion Committee .

Considerable enthusiasm over the National Adequate Wiring Program was evidenced at a dinner meeting held recently by the Roanoke Electrical Industry Promotion Committee. Lawrence W. Davis, general manager of the National Electrical Contractors' Association, and a member of the adequate wiring plan committee, was the principal speaker of the occasion.

A general discussion of the wiring program followed Mr. Davis' address. Among those participating in the discussions were W. H. Dowdy, Dowdy Electric Company; W. I. Whitfield, manager, Appalachian Electric Power Company; G. A. Deacon, architect; James Crouch, new business manager, Appalachian Electric Power Company; R. R. MacDonald, Westinghouse Electric Supply Company and president of the Roanoke Electrical Industry Promotional Committee; and C. C. Coon, Dowdy Electric Company.

Members of the Roanoke Electrical Industry Promotion Committee received L. W. Davis' talk on adequate wiring with enthusiasm . . .

New Orleans To Undertake Wiring Campaign . . .

More than 100 attended the recent meeting at New Orleans sponsored by the Electrical Association to announce details of the comprehensive plan for tying in with the National Adequate Wiring Program. An attractive plan book for the local program, outlining an eight-point plan, has been widely distributed to local electrical interests. O. C. Small, secretary of the Bureau's Executive Committee, made the principal address.

The New Orleans plan calls for the use of the window display poster, the sound-slide film, three direct mail folders, the Pictorial Primer, "Copper in the Home" booklet, architects' specification, and lecture chart.

North Carolina Contractors Elect New Officers . . .

The North Carolina Association of Electrical Contractors met recently in Greensboro for the purpose of electing officers. The newly elected officers and members of the board took office on May 1.

Among those elected were: O. W. Holmes, Fayetteville, president; Marion B. Haynes, Asheville, vice-president; E. H. Petree, Winston-Salem, vice-president; Ralph K. Robinson, Charlotte, vice-president; J. G. Hammond, Rocky Mount, vice-president; Frank E. Hartis, Durham, secretary; M. A. Dickson, Greensboro, assistant secretary; and D. J. Thompson, Raleigh, treasurer.

The new officers were installed at a meeting held in May.

A special committee consisting of R. H. Bouligny, Charlotte, W. H. Clegg, Durham, and Mr. Holmes, was appointed to hear and act upon any complaint an electrical contractor might have against any individual group or organization.

CODE Discussion

Code Changes Proposed By Utility Head . . . .

C. W. KELLOGG, president of the Edison Electric Institue, has presented to a joint committee of the Institute and the National Electrical Manufacturers' Association a proposal for certain changes in the national electrical code.

Many of these proposed changes have received discussion at meetings of both electrical contractors and electrical inspectors and the editors of ELECTRICAL SOUTH invite comment on these proposed changes. So far as space permits, discussions received from readers will be published in these columns.

The proposals are as follows:

1. Provision for the general use of non-metallic sheath cable of the covered neutral type as a wiring system.

2. Provision for the use of duplex and multiple conductor cables of covered neutral type in raceways of all classes.

3. Provision for bare neutral in conduit and electrical metallic tubing for general use.

4. Modification of the conduit area rule to permit in old installations utilization of the waste space for additional wire required by increased load.

5. Recognition of service cable of the covered neutral type for general indoor use.

6. Remove requirement for mandatory use of rigid conduit in theatres, elevators, and hazardous locations and of metal clad wiring in garages.

7. Provide for the general use of thin wall insulation.

8. Delete the rule requiring conduit to be shipped in 10-foot lengths.

Use Of Labeled Cord Shows Marked Increase . . . . .

The success of the program to encourage the use of Underwriters' approved and labeled flexible cords, in preference to cords of substandard construction, is shown in the accompanying chart. This program started in 1931, at which time most of the cord being produced failed to meet the Laboratories' standards.

Through the cooperation of various branches of the industry, interested in fire safety and satisfactory electrical service, the use of safe cord has been increased between three and four times since 1931. As the chart shows, labeled cord use has doubled in the last three years.

Those sponsoring and supporting this campaign are to be congratulated on their substantial contribution to safety and electrical service.

Electrical Code Investigation Sponsored By Mayors . .

First step in carrying out a resolution adopted at their last annual meeting relating to construction codes has been taken by the United States Conference of Mayors. A committee of five has been appointed by President LaGuardia of the Conference, to "give attention to the matter of a national electrical code."

Among those who will serve on the committee is Dewey Johnson, superintendent of electrical affairs for the City of Atlanta, Ga.

The resolution adopted by the conference last November reads as follows:

"WHEREAS, There exist a number of so-called model codes including those dealing with electrical wiring, plumbing, et cetera, and

"WHEREAS, These codes, on which ordinances in most of the cities are passed, are formulated and adopted by national code committees composed largely of delegates of private as distinguished from public or municipal agencies, and

"WHEREAS, It is essential to have more adequate public representation on these national code committees, including particularly the electric code committee, if the public interests are to be given proper consideration.

"THEREFORE BE IT RESOLVED, That the Annual Conference of the United States Conference of Mayors direct the Executive Committee to take such steps as may be necessary to bring about the desired result."

National Electrical Code Official Interpretations .

Interpretation No. 132—Inherent Overheating Protection, Section 4322

Question: What is meant by the term "inherent overheating protection" as used in sub-paragraph 2 of paragraph 3 of section 4322 of the 1937 edition of the Code?

Finding: Inherent overheating protection involves a property or characteristic of the motor that is inseparable from it. This protection may depend upon either motor temperature or current values or upon any combination of them.

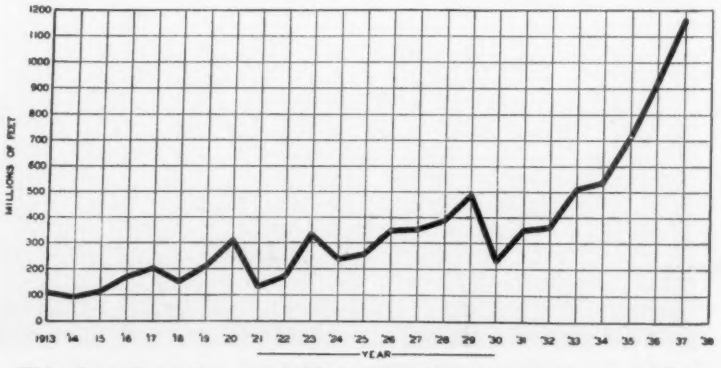
Interpretation No. 134—Branch Circuits, Article 210

Question 1: May portable lighting fixtures having medium base lampholder be supplied by 20 ampere and 25 ampere branch circuits?

Finding: No.

Question 2: May 20 ampere and 25 ampere branch circuits be used for lighting employing medium base

(*Continued on page* 52)



This chart shows the remarkable increase in use in recent years of flexible cord labeled by Underwriters' Laboratories . . . . . .

LIGHTING Practice

Flexibility Featured In Tower Lighting .

SCHOOL spirit has received formal recognition in the floodlighting of the classic-styled Library Tower at the University of Texas, Austin, Texas. The dramatic costume of orange and white light which clothes this $2,000,000 tower after dark presents the University colors in an impressive setting. Indiana limestone affords a background for the floodlighting.

Less than a mile away is the only rival which the tower has for its height of 311 feet, and that is the state capitol building dome, not more than 300 ft. in height.

In addition to studying the illumination of the tower as a whole, each architectural section was carefully considered for individual lighting effectiveness. The main shaft shades upward from brilliant to soft light. At the observation level immediately above, emphatic, brilliant light marks the transition to the interesting light and shadow patterns of the upper architectural portions. The different levels, or architectural divisions, conceal X-Ray floodlighting projectors of heavy grade copper and special weather-proof copper troughs. Alternately, these projectors are equipped with white and orange color lens which together with the intricate switch control achieves the important innovation in this floodlighting—the variety of lighting effects.

The following lighting combinations are possible by a mere flip of the switch:

1. The tower may be completely bathed by brilliant white light;
2. Orange light may be used alone;
3. Opposing sides may be white, the other two sides orange; or
4. Each level, or set-back, may be lighted by alternate colors of orange and white.

As the occasion demands, this flexibility gives the tower a fresh, colorful appearance.

A total of 280 X-Ray units with lamp capacity of 132,400 watts are used to illuminate this impressive tower.

Tests Show Value Of Good Lighting . .

Improper and inadequate light is a detriment, not only to eyes, but to the work of school children, as shown in a test study made in the Tuscumbia, Ala., city school. Two adjoining rooms were used for a three-year test, and students of similar grade, as determined by the teachers by previous progress, were seated in the two rooms. The teachers alternated in the teaching tasks.

One room was equipped with two 150-watt, direct-type fixtures and in the other room were installed four 300-watt, totally indirect fixtures controlled by a photoelectric relay. This relay incorporated an "electric eye" and a switch for turning the lights on and off. It was mounted so that it measured the amount of natural

(*Continued on page* 51)

Details of Installation

Location	No. of Units	Cat. No. X-Ray Proj.	Lamp Size in Watts	Type of Lens Outer	Type of Lens Inner	Total Wattage at Level
Base of Tower	24	403-C*	750	Plain	None	
	24	402-C	750	Spread	None	
	24	403-C	1000	Plain	Orange	
	24	402-C	1000	Spread	Orange	84,000
Observation Deck Level	32	12529-C	250	Spread	None	
	32	12529-C	250	Spread	Orange	16,000
First Offset Below Column	24	307-E*	500	Plain	None	
	24	307-E		Plain	Orange	24,000
Inside Belfrey	4	12529-C	250	Spread	None	
	4	12529-C	250	Spread	Orange	2,000
Top Parapet	32	In continuous copper housing	100	Plain	None	
	32		100	Orange	None	6,400
Total						132,400

*Projectors designated by "C" are concentrating type; those designated with "E" are of distributing type.

Night view of floodlighted Library Tower, University of Texas, Austin, (Photograph courtesy of Curtis Lighting, Incorporated) . . . .

WHOLESALERS' Activities

March Wholesalers' Sales Increase Over February .

The dollar volume of wholesale trade declined 17 percent during March, 1938, as compared with March, 1937, according to reports from wholesalers cooperating in the monthly joint study of the National Association of Credit Men and the Bureau of Foreign and Domestic Commerce. This was the largest decrease in sales from the same month of the previous year shown for any month in the past half year.

Electrical wholesalers' dollars sales for the country as a whole during March, 1938, declined 29.6% in comparison with sales for the same month last year but increased 20.8% over February, 1938.

Dollar sales by electrical wholesalers in the South Atlantic states decreased 35.3% in March, 1938, in comparison with March, 1937, but increased 7.9% over February, 1938. Corresponding figures for East South Central states are: decrease, 36.1% and increase, 23.5%. The same figures for electrical wholesalers in West South Central states are: decrease, 14.9%, and increase, 40.9%.

P. C. Gilham, Sr., Joins Electric Sales & Service

P. C. Gilham, Sr., for many years prominently identified in the electrical business in Atlanta, has joined his sons, P. C., Jr., and Harry Gilham, as a partner in the Electric Sales and Service Company.

A pioneer in the electrical and appliance business, in which he has been engaged since 1895, Mr. Gilham was founder in 1918 of the Gilham Electrical Company, which became one of the best-known firms of its kind in this section. He served as president of this firm until 1933.

Mr. Gilham's association will mark another milestone in the progress of the Electric Sales and Service Company, whose growth has been steady since its founding five years ago.

Mr. Gilham's activity particularly will be devoted to the building supply end of the business.

Hotpoint Announces New Distributor For W. Va. . .

Announcement of the appointment of the Wheeling Kitchen Equipment Company, as a full line Hotpoint distributor in the northern half of West Virginia, including the Panhandle, has just been made by W. H. Bondurant, district sales manager of the Edison General Electric Appliance Co., Inc., Chicago, manufacturer of Hotpoint major appliances.

C. J. Gerker is president of the Wheeling Company. Other members of the organization are L. A. Middleton, general manager, L. R. Wagoner and A. W. Pryor.

Mr. Pryor will handle the dealer business, and Mr. Middleton and Mr. Gerker, the utility accounts of the company.

Westinghouse Supply Co. Occupies New Quarters In Norfolk . . . .

The Norfolk branch of the Westinghouse Electric Supply Co., of Virginia, has just moved to new and larger quarters at 320 City Hall Avenue, according to announcement by W. M. Jewell, branch manager.

The new location is more convenient for customers, and ample parking space is available. Larger quarters and improved facilities will result in better service.

The Norfolk branch was established in 1935 at 254 Tazwell Street with six employees. The new location has twice the floor space of the old quarters, personnel has more than doubled, and business volume has increased proportionately, Mr. Jewell reports.

Architect's sketch of new Graybar branch in Columbia, S. C.

Parks To Sell For Southern Electric Supply Co. . . .

S. J. (Jim) Parks, of Crowley, La., has just joined the sales force of the Southern Electric Supply Co., wholesale electric supply and lighting fixture company of Houston, Texas, according to an announcement by J. P. Hamblen, general manager.

Mr. Parks has been a jobber salesman for fourteen years, is an electrical engineering graduate of Tulane University, had six years radio experience with the United States Navy, and spent nineteen months in France in the World War as an aviator.

Two New Show Rooms Opened By Spurrier's, Inc. . . . .

Spurrier's, Incorporated, Oklahoma City, announce the appointment of George R. Hayden, formerly of Kansas City, as salesmanager.

The company, headed by O. K. Spurrier, who entered the appliance field in 1930, recently moved its show rooms and offices to 810 Northwest Fourth street. A new showroom has been opened in Tulsa, also, at 8 North Cheyenne Street.

The firm is now Oklahoma distributor for the Crosley line of appliances.

Electrical Products Featured In Riechman-Crosby Meeting

The electrical department of the Riechman-Crosby Company, Memphis, Tennessee, had a prominent place on the program of a three-day sales conference in the latter part of April which concluded a series of sales meetings held throughout the year.

Among those who participated in the program were T. E. Woodruff, manager motor and pump division, St. Louis, O. P. Jackson, scale division, St. Louis, George Wright, sales division, Memphis, and J. A. Cuneo, sales division, St. Louis, all of Fairbanks-Morse Company.

I. R. Wright, sales engineer, Allen-Bradley Company, Milwaukee, also appeared on the program, discussing motor starting equipment; and M. E. Ferrer, Walker-Turner Company, discussed the Driver line of power tools.

FREE TO ONE OF YOUR CUSTOMERS...A WHITEHEAD MONEL KITCHEN

...AT OUR EXPENSE

Put on a big sales-building contest. Read the quick facts and take advantage of the special offer below.

Take your choice of these two Monel kitchens.

GIVE away... absolutely FREE... a smart up-to-the-minute, model Monel* kitchen! Attract crowds of eager prospects! Make your showroom headquarters for electric kitchen equipment in your community!

Open to all of your customers and prospects. No entrance fee. Nothing to buy. *The winner gets a beautiful new Whitehead Work-Saving Kitchen with lustrous sink and shining work surfaces of silvery Monel*... AT OUR EXPENSE.

What a break for you! You *buy* one kitchen... and get another at *no extra cost*. You make your showroom the big center of attraction. You display your appliances in a real kitchen atmosphere. You create interest in your whole line...especially in quality electric appliances. You give away FREE a complete new kitchen, and get the benefit of the attendant excitement and publicity.

Take advantage of a million dollars' worth of National Advertising. Feature Whitehead and Monel products that are advertised consistently in top-notch magazines reaching more than ten million readers. Act now... mail attached coupon.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York, N. Y.
Send me full details about the Monel Kitchen Contest and your special offer.

*Name*_____

*Address*_____

ES 6-38

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK, N. Y.

MONEL

*"Monel" is a registered trade-mark of The International Nickel Company, Inc., which is applied to a nickel alloy containing approximately two-thirds nickel and one-third copper.

MANUFACTURERS' News

Standard Electric Ranges Announces Reorganization and Expansion Plans .

Following acquisition of its assets by the Standard Electric Manufacturing Corporation, the 25-year-old Standard Electric Stove Company has reorganized under the former's name, for the purpose of rehabilitation through a re-inforced capital structure and enlarged manufacturing facilities.

According to Joseph W. Robinson, president of the new corporation, there have been no changes in personnel—the purpose of the reorganization being to enlarge the scope of the company's activities and to improve its manufacturing and distribution facilities, for better and more efficient service to dealers.

In addition to Mr. Robinson, who was associated with the Libbey Glass Company for nearly 25 years, during 10 of which he served as president, other officers of the newly-organized Standard Electric Manufacturing Corporation include: Jefferson D. Robinson, vice-president, formerly vice-president of the Libbey Glass Company, with which he was associated for 10 years; Charles A. Pierson, formerly president of the Standard Electric Stove Company and connected with them for 20 years, who now becomes the new corporation's vice - president in charge of manufacturing, also heading up and organizing a new research and development department; H. H. Venable, formerly sales manager for the Standard Electric Stove Company, with which he was connected for 25 years, now vice-president in charge of sales for the range division of Standard Electric Manufacturing Corporation; and Ellsworth L. Tait, treasurer, who served the Libbey Glass Company as assistant treasurer for 20 years prior to its sale to the Owens-Illinois Glass Company.

The corporation plans to engage in a broader and more extensive manufacturing program which will include not only an improved line of electric ranges for both domestic and commercial use but also a wide variety of household electrical appliances.

"Triple Play" Drive Introduces New G-E Home Laundry Line .

The spring and summer sales drive on the new General Electric home laundry equipment line, as announced by Lee Wichelns, sales promotion manager, has been drawn on the plan of big league baseball competition and christened the "Triple Play Campaign."

It will feature a national consumer contest, from May 16 to July 9, during which time 56 new washers and automatic flatplate ironers will be presented to women whose 25 words best tell the story of customer satisfaction with the new equipment.

All details in connection with the awards will be handled by the Bridgeport headquarters, easing the customary burden on dealers and distributors, but supplying them with demonstration leads.

Broadcasts on the NBC Red Network on May 15 and 29 and on June 5 and 19 will feature the contest. The new General Electric washing compound will be tied into the campaign, along with special promotional pieces and the regular cooperative advertising arrangement.

General Cable Corp. Moves Chicago Office . . . .

General Cable Corporation announces the change in address of their Chicago office from 20 No. Wacker Drive to 111 No. Canal Street; telephone connection, Franklin 1101, remains unchanged.

Fairbanks-Morse Backs Water System Dealers .

Fairbanks, Morse & Co. believes its dealers have distinct advantages in sales competition with "mail order" home water systems, and the company is actively helping these dealers capitalize upon their advantages, according to Harry Neal Baum, advertising manager.

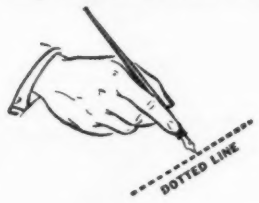
A feature of the advertising campaign is a broadside which calls for a "show down" with "catalog" units. This is an illustrative presentation of both F-M and mail order water systems, with corresponding parts of each shown side by side. The pictures tell, more forcefully than could words, the superiority of the line built to quality rather than price. The complete advertising program, said Mr. Baum, includes schedules in farm papers, direct mail pieces and dealer helps.

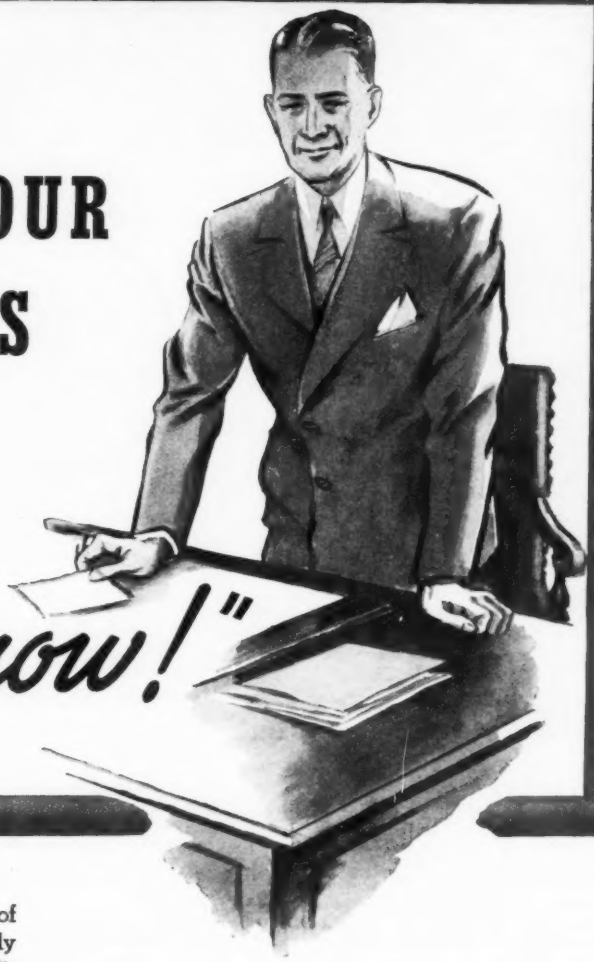
H. N. Baum

Fairbanks - Morse has further strengthened the position of its dealers by augmenting its line of pumps for home and farm water supply. In addition to displacement type pumps commonly offered, F-M dealers have had peripheral pumps as well. Now the company has brought out an ejector centrifugal pump which, like the other two types, is ideal for certain applications. With this complete line of pumps in many sizes and variations, the F-M dealer is in a position to exactly satisfy any requirement. His customers are not limited in their selection, as they would be in buying "mail order" units, Mr. Baum pointed out.

J. W. Robinson H. H. Venable C. A. Pierson J. D. Robinson E. L. Tait

"I HAVE MANY OF YOUR PROSPECTS





half sold now!"

I CAN help you close sales with many of your good prospects who have already purchased automobiles or household appliances on the Commercial Credit time-payment plan. They appreciate our friendly, fair treatment. When you talk terms to them you find them "sold" on Commercial Credit financing.

I know your local credit picture from A to Z. I know how to protect you from risky sales. I make collections in a frictionless way that relieves you of worry or embarrassment. The resources of a great national organization are back of me, to finance all the sound business you can produce, regardless of temporary local conditions.

Every dealer who uses our service gets the complete cooperation he's looking for.

If you want to know more, I'm easy to find. I'm your local Commercial Credit manager, ready to serve you from any one of more than 200 offices in principal cities of the United States and Canada. Call me up.

REFRIGERATORS • RADIOS
RANGES • HEATING AND AIR
CONDITIONING EQUIPMENT

COMMERCIAL CREDIT COMPANY

COMMERCIAL BANKERS

HEADQUARTERS BALTIMORE CONSOLIDATED CAPITAL AND SURPLUS OVER $64,000,000

Serving Manufacturers, Distributors and Dealers Through More Than 200 Offices in the United States and Canada

Westinghouse Introduces Sales Producing Publications . . .

Two new and comprehensive electric range sales helps, a 1938 Sales Manual and a Proof Book have recently been released by the Westinghouse Electric & Manufacturing Company and are available for dealers and salesmen.

The new Sales Manual, titled "How To Sell Westinghouse Kitchen-Proved Electric Ranges," gives to the dealer and his salesmen all the information required to sell more ranges. Catalogued as the most comprehensive manual ever released by the Range Department, it contains product information, the complete 1938 sales story, selling plans and technique, prospecting plans, verbatim stories for all dramatic pieces and common questions about electric cooking and their right answers.

The results of the national range Kitchen-Proving activity, conducted by Westinghouse, are now for the first time bound in book form and available to dealer salesmen in the new Proof Book. Outstanding and extremely valuable as a "sales closer" the results of the tests for each kitchen, of which there were 103, are summarized and the Kitchen Proving hostesses' actual statements are recorded.

Publication For Wholesalers' Salesmen Announced . . .

"A Salesman's Own Guide Post to Wire and Cable Selling" is the title of a new publication just issued by General Cable Corporation, New York, N. Y.

This booklet has been published for the education of, and use by, electrical wholesalers' representatives. Its purpose is to show the wholesaler's representatives in brief form what to recommend and where. It includes a brief resume of the complete line of wires, cables, cords, and cable accessories. Detailed information on general construction, application and market is given for each product.

In addition to information on the types of cable and wire produced by General Cable and the general uses to which they are put, the booklet includes a number of useful tables, wire gauges, conventional signs, and other data of particular interest to the wire and cable salesman.

Shown here is a new symbol and slogan recently adopted by General Cable Corporation. It will appear in the company's advertising and will be utilized in sticker form on all correspondence.

Hygrade Sylvania Installs Effective Office Lighting

An attractive folder illustrating the modern lighting installed in the executive sales offices of the Hygrade Sylvania Corporation, Lamp Division, has just been issued. An entire wing on the top floor of a downtown Boston office building is now occupied by Hygrade Sylvania. The new offices supply improved facilities for the Lamp Division and present, at the same time, a practical demonstration of modern and effective office lighting, in the most modern surroundings.

The folder together with complete specifications, prepared by the engineering division of the corporation, has been mailed to illuminating engineers of light and power companies.

Mrs. C. T. McIntyre, well known to southern electrical jobbers and supply houses, has become associated with Hygrade Sylvania Corporation and is representing the company in the state of Georgia.

Recent Personnel Changes And Appointments . . .

Three vice presidents and two division managers of the Westinghouse Electric and Manufacturing Company have been assigned new duties in a revised schedule of responsibilities announced by President George H. Bucher.

Ralph Kelley, vice president, is placed in charge of sales of the

Ralph Kelly

Company with headquarters in the Pittsburgh executive offices. Formerly he was in charge of Pittsburgh district works including the headquarters plant at East Pittsburgh.

R. B. Mildon, vice president, as-

New Dealer Tie-In Program
New Sales Literature
Ready for the Best 5-Year Advance
Increased Publicity
New Lighting Equipment
Army of: 1000 Jobber Salesmen 250 Expt. Elec Salesmen 200 G-E Lamp Salesmen
New Portable Demonstration Material
New MAZDA Lamps
5 Years of BL-BS Success
Increased Advertising

'Duke' Palmer Is Crowned King

Winding up the annual 3-day conference for utility lighting directors and advisors, held recently at Nela Park's General Electric Institute, was a novel final stage-show entitled "Yours to Command."

Representing the utilities in this coronation presentation was Roy A. Palmer of Duke Power Co., Charlotte, N. C. Chosen at random out of 163 utility men from all sections of the country, Sire Palmer was robed in regal ermine and crowned king of "Queen Light-Conditioning," enacted by comely Ruth King of the Institute staff.

To pompous fanfares tooted by triple trumpets, eleven crusaders in coats-of-mail marched on stage to display standards naming the outstanding promotional activities and sales tools.

A Guinea Pig's Fate

is an Easy One... by Comparison!

Like medical research through scores of guinea pig generations, General Cable **RESEARCH** on **NETWORK CABLE** has been a long sustained effort. Samples upon samples have been tested to destruction. Not by Geer oven and oxygen bomb aging tests alone, but by **SIMULATED FIELD CONDITION TESTS** that compress years into days:

(a) periodic wetting or immersion while undergoing

(b) periodic loading equivalent to the fluctuation of an average load curve

(c) including exposure to acid, alkali or neutral moisture, with and without such an oil film as represents frequent seepage conditions in city streets

(d) and exposure to extremes of heat.

If you are calculating a probable cost per circuit mile year of operation, these test figures and the performance records of millions of feet now in service are available. Our engineers will be glad to discuss your specific operating requirements.

GENERAL CABLE CORPORATION

Sales Offices: Atlanta • Boston Buffalo • Chicago • Cleveland Dallas • Detroit • Los Angeles New York • Philadelphia • Pittsburgh • Rome (N. Y.) • St. Louis San Francisco • Seattle Washington (D.C.)

Electrify WITH COPPER

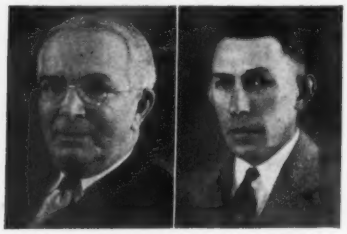
GENERAL CABLE GENERAL CABLE GENERAL CABLE

GENERAL CABLE

NETWORK CABLE

sumes management of the East Pittsburgh division coming here from Philadelphia where he had charge of the steam and stoker departments with headquarters in the South Philadelphia Works. His new offices will be in East Pittsburgh.

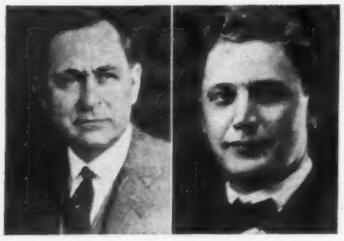
N. G. Symonds, vice president, long associated with sales operations will



R. B. Mildon R. A. McCarty

devote his time in the sales department to specific customer activities, association work and special duties as assigned.

Other appointments listed **Roy A. McCarty**, formerly manager of the small motor division at Lima, Ohio,



N. G. Symond B. H. Lytle

as transferred to South Philadelphia as manager of the steam and stoker division; and **B. H. Lytle**, formerly a division manager in East Pittsburgh goes to Lima as manager there.

C. J. White

C. J. White was recently elected president and **A. A. Berard**, vice-president, of The Tork Clock Company, Inc.

Mr. White, or "Cy" as he is familiarly known among the trade, was Pacific Coast representative for the company for ten years prior to coming East in 1933.

Mr. Berard is general sales manager of The Ward Leonard Electric Company and takes a prominent part in NEMA affairs.

* * *

Gordon H. Clark has been appointed southern division manager for the Automatic Electric Heater Co. Inc., manufacturers of Sepco electric water heaters and electric heating specialties.

Mr. Clark will make his headquarters at Birmingham and will supervise the rapidly increasing sales of his company's products in North and South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, Louisiana and Texas.

* * *

Announcement has been made of the appointment of **J. T. Lusignan, Jr.**, as executive engineer of The Ohio Brass Company, Mansfield Ohio. Formerly engineering assistant to the vice president, Mr. Lusignan will now supervise all engineering activities of the O-B organization.

* * *

E. L. Burland has been appointed district sales representative for General Electric wiring materials in Alabama, Tennessee, Mississippi, and Louisiana with headquarters at Birmingham, Ala., according to announcement made by R. R. Morgan, General Electric district manager of wiring material sales at his office in Atlanta, Ga.

Mr. Burland has previously been a special headquarters representative for the Conduit and Wire Sales Section of the General Electric Company working out from the company's Bridgeport, Conn., sales office.

E. L. Burland

Placed wherever needed to properly direct ventilation, this floor model Westinghouse fan is styled to harmonize with home settings. The sturdy, non-tip base provides maximum safety and allows the fan to be placed in any convenient location. This fan is finished in mahogany and brown with a one-piece large capacity fan, finger touch oscillation adjustment and quiet oiless bearings. The 1938 Westinghouse Fan Catalogue, presenting the complete line of fans, attractively illustrated and bound in a single booklet, is now available for distribution. . . . . .

New Chromalox Catalogue

A catalogue of Chromalox Super-Speed Electric Range Units designed specifically for southern distribution is now available from Edwin L. Wiegand Co., Pittsburgh, Pa.

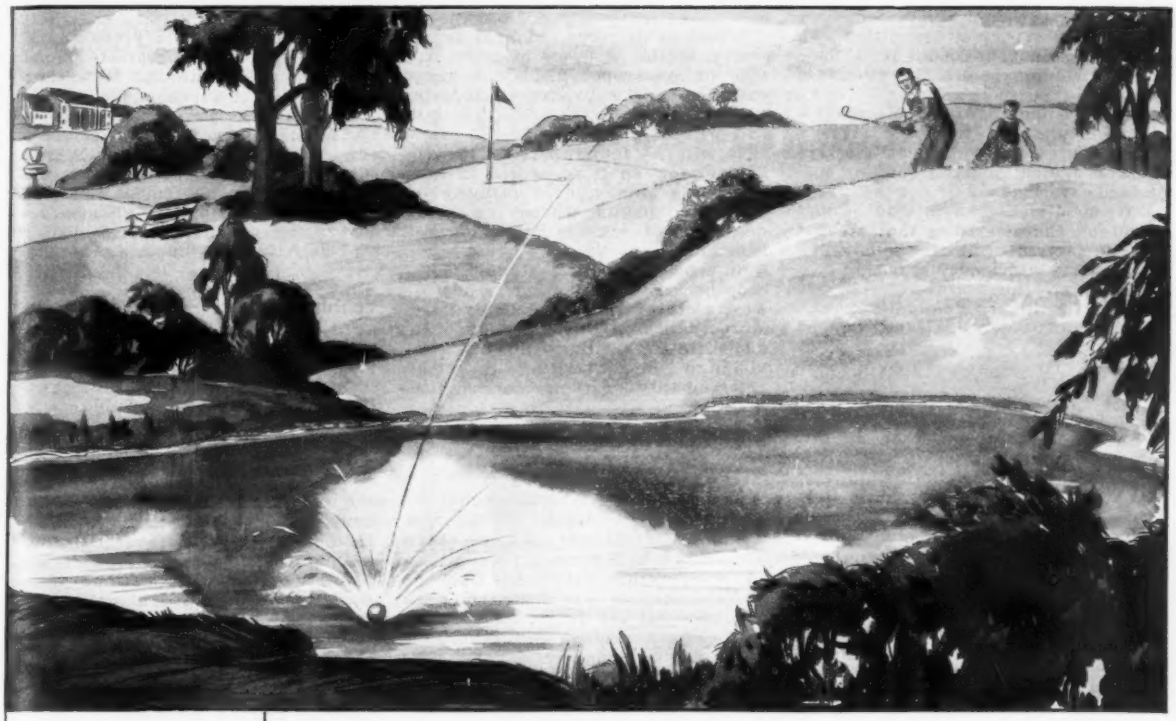
Designated as bulletin No. CE-107-S, the publication includes not only a complete listing of standard ratings and prices for all ranges, as well as adaptor rings and other parts, but also includes descriptive data of particular value to the salesman and installation directions that will prove most helpful to the service man lacking familiarity with this type unit.

C. B. Rogers, southern representative of the company, who maintains headquarters in Atlanta, reports that the catalogue is being received enthusiastically.

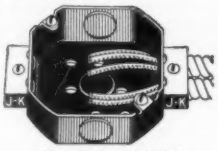
New Circuit Breaker

The Frank Adam Electric Company, St. Louis, announces its new "DUBLBRAK" circuit breaker for 125 volt a-c or d-c service in capacities from 6 to 50 amperes.

This is a bi-metallic thermal type breaker. It is trip free, non-closeable on short circuits or heavy overloads; incorporates positive double-break contacts with low-arcing quick-make and quick-break action. The extreme value of the quick-contact

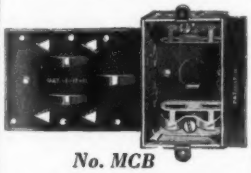


A few of the products in the complete RACO • ALL-STEEL • PRODUCTS line:



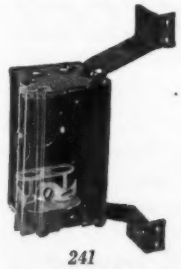
No. DO-26N-JK

Boxes with external clamps offer the maximum of wiring space.



No. MCB

Bracket Switch Boxes—for all classes of cables and for conduit.



241

Oversize switch boxes with or without "twin brackets"—for all classes of service.

RACO • ALL-STEEL • PRODUCTS
HELP YOU GET OVER THE "WATER HOLES"

• When it's a question of a little more "drive" you can depend on RACO • ALL-STEEL • PRODUCTS to put you over. Their years of acceptance and approval by trade and user give you the *extra* advantage.

Products that fall short, that have not won recognition are costly to handle. Time and money are lost trying to fight them onto the job.

RACO • ALL-STEEL • PRODUCTS have been developed by modern competent engineering to meet each of the many complicated wiring job requirements in a clean, workmanlike manner. There is a total of more than 40 years of manufacturing experience behind the products carrying these well known trade-marks, which is your assurance of the continuation of quality, dependability and salability. Write today for the catalog illustrating the complete line. There is no obligation.

Distributed Nationally by

ALL-STEEL-EQUIP COMPANY, INCORPORATED

626 JOHN STREET • AURORA, ILLINOIS

Factories: South Bend, Indiana • Aurora, Illinois

RACO • ALL-STEEL • PRODUCTS

SWITCH BOXES • OUTLET BOXES • CUTOUT BOXES
CABINETS • FUSE CABS • CONDUIT FITTINGS

separation is found in the fact that under a short-circuit condition the current cannot build up to a dangerous volume before the circuit is broken.

Two distinct advantages are combined in this new circuit-breaker:

It assures automatic, positive protection against short circuits or sustained overloads.

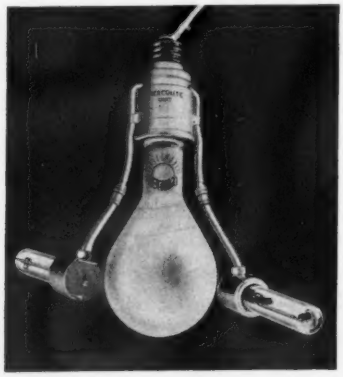
It is designed with the proper time lag characteristics that prevent needless circuit interruptions when momentary overloads occur.

An interesting feature of this new breaker is the red dot indicator signal button which indicates tripped position.

Color Correction Lighting

A new color correction lighting unit is announced by Science Laboratories, Inc., Cincinnati, Ohio. Designated as the Sperti Mercolite Unit, this device provides illumination in which the deficiency of blue light as produced by incandescent lamps is supplemented with the color corrected output of two low pressure mercury tubes.

A distinctive feature of the new unit is its design which permits operation in existing light fixtures without auxiliary transformers or reactors. Other features are: lamps will start instantly whether hot or cold with full intensity assured in 15 seconds: stroboscopic effects are entirely absent; and unit is adjustable to permit use in medium or mogul base sockets.



Where color corrected light is essential to the accuracy of work, inspection or proper display of merchandise, as in many stores, windows, offices, or studios, this lighting unit will provide illumination.

It will be found particularly effective for spotting work in dry cleaning plants, and in printing or engraving plants where the color matching of inks is an important function.

Interior decorating studios, haberdasheries, tailoring or ready-to-wear clothing shops and department stores will find this new light unit an effective selling aid in convincingly demonstrating the true color quality of their merchandise.

Sales Manual Offered By Viking Corporation . .

A comprehensive sales manual for the dealer pertaining to the new Viking CirCOOLator has just been announced by Viking Air Conditioning Corporation, Cleveland, Ohio.

This manual has been compiled expressly for the dealer-installer, reports the company, and represents the combined engineering and sales experience of manufacturers, household appliance merchandisers, air conditioning engineers, electric utility experts, and wholesalers and dealers all over the country.

Copies of the publication are available to anyone interested in attic ventilation or Viking products.

Frosted Food Storage Chests Announced By Frigidaire . .

In anticipation of the rapid growth in the distribution of frosted foods, Frigidaire Division, General Motors Sales Corporation, is marketing through its commercial sales outlets a line of four refrigerated storage chests for grocers, butchers and other retailers of frosted foods, according to announcement today by Roy E. Smithson, commercial sales manager.

Sales activity will be started immediately, the announcement said, since the chests already are in production at Frigidaire's Moraine City, Ohio plant.

Depending upon the product and shape of package, the frosted food chests have the following capacities: Model P-30, 10.04 cubic feet or approximately 300 pounds; Model P-40, 13.74 cubic feet or approximately 400 pounds; Models P-60 and R-60D, 20.61 cubic feet or 600 pounds.

As accessory equipment, each of the chests may have a double-face advertising display sign for listing of frozen food products and prices.

Ventilation Guide Published By Air Controls, Inc. . .

Air Controls, Inc., Cleveland, Ohio, announces the issuance of their 1938 Rex-Airate Guide.

In this book, according to announcement, the company has endeavored to accumulate the experience of dealers and salesmen during the past few years into a comprehensive survey of the ventilation field.

Opportunities for making sales are pointed out and illustrations of installations that have actually been made and proved their worth are included to show the dealer how he can profit from Rex-Airate sales.

General Electric Publishes Instrument Brochure . .

"When You Can Measure," a 32-page brochure recently published by the General Electric Co., tells in brief the contributions of General Electric engineers and scientists to the important art of measurement. This attractive, beautifully printed publication describes in pictures and in words the story of how instruments are designed, constructed and tested in the "headquarters for electrical measurement."

Every development in electricity has grown out of experiments in which instruments played a major part. The incandescent lamp, the electric motor, electric household appliances, radio—none of these commonplaces of modern living would have been possible without the imposing array of ingenious, sensitive, accurate measuring devices engineers have perfected.

EXTRA SALES FEATURES— the extra features of the Hamilton Beach food mixer give you extra selling points — easier sales.
FREE DEALER HELPS — Complete — attractive. Furnished *free on request.*
WHOLESALER - RETAILER POLICY — distributed only through established wholesalers.
Order Hamilton Beach food mixers from your wholesaler. Write us for *free* dealer helps.
HAMILTON BEACH CO., Racine, Wis.
Division of Scovill Manufacturing Co.

HAMILTON BEACH FOOD MIXER

TORK CLOCKS
for
Window Lighting, Signs, Heating, Ventilating and Air Conditioning.
Portable Models for Radios and Cookers
$9.75 and up
WRITE FOR BULLETINS
Henry W. Clower
36 Alabama Street Atlanta, Ga.
The Tork Clock Co., Inc., Mount Vernon, New York

New Circulator Offered By Texas Manufacturer . . .

The Tennison Manufacturing Company, Houston, one of Texas' oldest and largest manufacturers of metal products, has extended its manufacturing activities into the field of air conditioning. An entirely new product known as the Kelley Gulfbreeze Circulator is now being manufactured.

The circulator is designed to be used both as an attic ventilator for homes and for circulation of air in places of business.

The new fan blades have already received the rating of the National Fan Manufacturers' Assn. Other features are: Firestone rubber vibration dampeners which make it impossible for any vibration to go into the structure of the fan or into the house where it is installed; General Electric motor mounted on rubber eliminating noise and insuring long life for the motor; orifice of the housing spun out to increase efficiency and permit greater capacity of air at a lower speed; ball bearings in the hub packed with grease which eliminates any oiling or greasing for two years; braces which hold the fan are of sturdy steel pipe; housing is made entirely of steel and is finished in green crinkle; and the blades of the fan are aluminum finished.

Cooperative Merchandising —Trends and Results . .

(*Continued from page* 7)

"Frankly, we never dreamed of having such worthwhile information. It is what we have always wanted but never dreamed of getting."

"We know of no contribution which your company could make in its endeavor to cooperate with dealers in this territory which would have been of more service," wrote a dealer operating a chain of stores.

Tests Show Value Of Good Lighting . . .

(*Continued from page* 41)

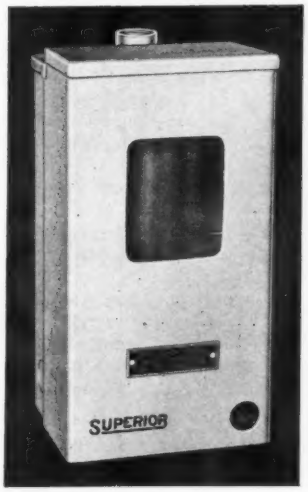
light available. A time clock was also used to put the mechanism into operation at eight o'clock in the morning and to turn it off at three o'clock in the afternoon, on school days.

At the end of the first year, it was found that 21.1 per cent less failures occurred in the room which was photoelectrically controlled. In the second year, the percentage of failures in the normally lighted room was 19.1 per cent above that of the indirectly lighted room; while in the third year of the test, 12 per cent fewer failures were noted in the room having automatically controlled lighting.

DIRT—DEVILTRY—DIVERSION

(The Three "D's")

Your Electric Meters are normally honest, accurate assets



Any or all of the "Three D's" will turn your electric meters into tricky, inaccurate liabilities.

Superior Overall Meter Enclosures will protect your meters from Dirt, Deviltry and Diversion.

Write for Bulletins 378 and 379

Superior Switchboard & Devices Company

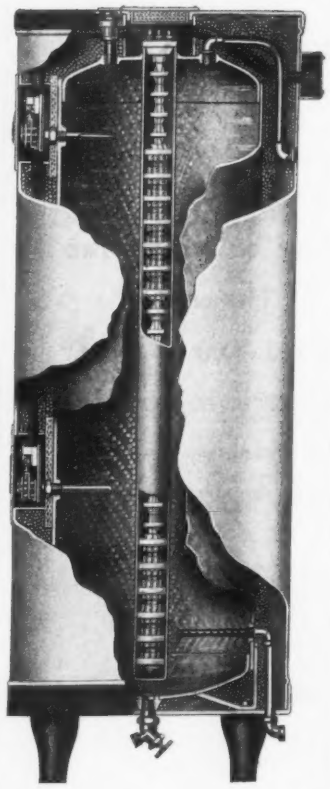
CANTON, OHIO

*Been at it Since 1920

SUPERIOR

REG. U. S. PAT. OFF.

Step Out in Front
With
SEPCO



The only Heater that is DIFFERENT.

Time Tested Features that make sales Easier and Permanent.

Southern Distributors
Clary-Marsh Company, Inc.
Birmingham

Economy Electric Supply Co.
Atlanta

Graybar Electric Company, Inc.
Dallas—Ft. Worth—Beaumont
San Antonio—Houston

Major Appliances, Inc.
Miami—Jacksonville—Tampa

Manufactured since 1915 by

AUTOMATIC ELECTRIC HEATER COMPANY, INC.
Pottstown, Pa.

Southern Division Headquarters
P. O. Box 1707
Birmingham, Ala.

Code Interpretations

(*Continued from page* 40)

and smaller lampholders?

Finding: No, as per answer to Question 1.

Question 3: May 20 ampere and 25 ampere branch circuits be used for lighting when only mogul (heavy-duty) base lampholders are used?

Finding: Yes.

Question 4: What load should be assumed for mogul base (heavy-duty) lampholders installed on 20 ampere or 25 ampere branch circuits?

Finding: Not less than 5 amperes for each outlet, as per paragraph 2107-b.

Question 5: Do Sections 2101 and 2105 prohibit use of portable air heaters (2-wire, 230-volt) on individual branch circuits?

Finding: No. This use is provided in Section 4247.

Question 6: Does Section 2105 prohibit connection of a water heater to the outside legs of a 3-wire 125-250 volt branch circuit?

Finding: No.

Question 7: What does the term "hot-water supply to the premises" in Section 2105 signify?

Finding: A device connected by plumbing to the water piping system.

Interpretation No. 135—Service Switch on Pole, Section 2351.

Statement: A farm property receives current supply through overhead lines terminating at a pole at a central location in the yard. A meter is placed on the pole at a suitable elevation above ground. Load wires from the meter return to the cross arm, or equivalent fixture, at the top of the pole, from whence individual drops supply the several separate buildings through standard methods for installing service entrance conductors and through standard service entrance equipment in each case.

Question: With such an arrangement is it necessary to have a master service on the pole that will control the meter?

Finding: No.

Interpretation No. 136—Grounding of Interior Wiring System, Section 2533

Question: May the connection for grounding an interior wiring system, such as is required in Section 2533 of the 1937 edition of the National Electrical Code, be made within a sealable metallic enclosure for the meter that is located ahead of other service entrance equipment?

Finding: Yes.

Interpretation No. 140—Range a Portable Appliance, Article 100

Question 1: May an electric range rated at more than 1650 watts be considered a portable appliance, as defined in Article 100 of the 1937 National Electrical Code?

Finding: Yes, if it is installed so that it may be "detached from its source of current by means of flexible cord and attachment plug."

Question 2: May a plug and receptacle be used as the disconnecting means for a domestic electric range in single-family, two-family, and multi-family dwellings?

Finding: Yes.

Interpretation No. 141—Limit of Service Disconnecting Means, Sections 2351 and 2371

Question: Under sections 2351 and 2371 of the 1937 edition of the National Electrical Code, is it permissible to install six sets of circuit breakers, each set consisting of six circuit breakers in a separate enclosure; or six sets of fused switches, each set consisting of six fused switches in a separate enclosure, without a main line disconnecting means?

Finding: No.

Well-Planned Advertising Investment—Not Expense

(*Continued from page* 14)

One excellent way to stimulate your imagination is to spend a few minutes looking through the advertising pages of a good magazine. Note the headlines of the advertisements and while you will not want to copy any one of them it is surprising how many good ideas will suggest themselves to you.

What would you say to a possible purchaser if you were to meet him face to face? Perhaps the very words you would use would serve as the basis of your headline. But keep it short. If there are more than three or four words break it up into two or more lines, divided according to the ways the phrases or clauses naturally may be read and understood.

Holding the reader's attention after you get it is the next consideration. To do this you must know why and how your merchandise will appeal to the people who read your advertising and who are your prospective customers.

There are basic reasons why people want things. For lack of a better word fundamental wants are customarily called instincts. There are a number of these: the instinct of hunger, which makes us want food and drink; the instinct of love, which sways our thoughts concerning home, family and loved ones: the instinct to construct, which motivates our desires for a good home, an improved farm, a

Any Repair Shop

Can make Money with

BROWNING Coil Winding *and* Spreading Equipment

There is nothing to stop you from making money if your shop is equipped with Browning Coil making equipment—Makes your shop modern—allows you to handle the big profit jobs—speeds up your production and helps you to show a bigger net profit.

THE BROWNING LINE INCLUDES:

Loop and Field Winder, 9 Speed Heavy Duty Type; Combination Loop Field and Transformer Winder, Universal Diamond Coil Winder; Coil Spreader, 30, 42, 60, 84 inch Loop capacity; Reel Rack and Tension Devices; Winding and Banding Machine.

Write Today for Information about any item.

POTTER & RAYFIELD, INC.

Manufacturers of Browning Coil Equipment

Hemphill Ave., Atlanta, Ga.

DINKLER HOTELS

Landmarks of Southern Friendliness

You will find the Dinkler Hotels located conveniently on all principal highways in the South . . . in each you will find a cordial welcome by a cheerful, friendly staff. The rooms are large and well ventilated . . . each with private bath and radio . . . garage connections are convenient and popular prices prevail in dining rooms and coffee shops.

★ The ANSLEY IN ATLANTA, GA.
★ The SAVANNAH IN SAVANNAH, GA.
★ The ST. CHARLES IN NEW ORLEANS, LA.
★ The ANDREW JACKSON IN NASHVILLE, TENN.
★ The JEFFERSON DAVIS IN MONTGOMERY, ALA.
★ The TUTWILER IN BIRMINGHAM, ALA.
★ The O. HENRY IN GREENSBORO, N. C.

MODERATE RATES

ILLUSTRATED FOLDERS SENT UPON REQUEST

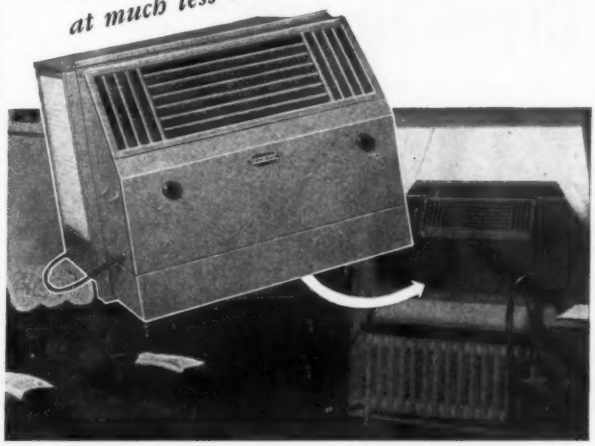
DINKLER HOTELS,

CARLING DINKLER, President and General Manager

OPERATING 3000 ROOMS IN SOUTHERN HOTELS

Another BIG SUMMER SELLER by USAIRCO!

A new 'package' cooling unit that satisfies the urgent demand for hot weather relief at much less cost than refrigerated units.



KOOLER-AIRE Window Unit

Placed on window ledge, with window closed to top of it. Draws in fresh outdoor air, cleans it, COOLS it to COMFORT point and circulates it throughout the room. Exclusive air directional control assures most pleasing results without drafts. Silences street noises. A demonstration delights prospects with its refreshing gentle breezes.

Just "plug in" and fill with water. No drain required. Can be moved from room to room. Attractive appearance, economical operation. For big new profits this summer get one on your demonstration floor. Retail Price, F.O.B. factory, only **$165.00**

USAIRCO Portable ROOM UNIT

Another fast-selling item. Works on same principle as Kooler-Aire Window Unit. Easily moved about on rubber-tired casters.
Retail Price, F.O.B. factory **$195.00**

USAIRCO COMPLETE LINE includes Midget Kooler-Aire for small stores, etc., Home Ventilator *(attic fan)* for cooling air circulation, and other cooling, ventilating and air conditioning equipment. Send coupon for USAIRCO catalog and dealer franchise. State territory.

USAIRCO Air Conditioning EQUIPMENT

6000 INSTALLATIONS PROVE U.S.AIRCO DEPENDABILITY

UNITED STATES AIR CONDITIONING CORPORATION
Minneapolis, Minn.

New York City
420 Lexington Ave.,
Phone Mohawk 4-0563

Chicago
550 W. Washington Blvd.
Phone Dearborn 7443

U. S. AIR CONDITIONING CORP.
2145 Kennedy St. N. E., Minneapolis
Send literature on USAIRCO Equipment.
Territory we cover.....
Name.....
Address.....
City.....
State.....

SAVE Time and Money with Greenlee Tools

Hydraulic Conduit Benders

Greenlee Hydraulic Benders are time and money savers, because they bend conduit quicker and easier than by other methods. In addition, they make smooth, even bends, eliminating many fittings and making it easy to pull in wire and cable. They are simple to operate and are readily portable.

Knockout Tools

Greenlee Knockout Punches and Cutters are time savers and profit makers, because they make it easy to enlarge holes in switch boxes, cabinets, etc. They form clean-cut holes quickly and accurately, without reaming or filing.

Other Greenlee Tools

Hydraulic Pipe Pushers
Joist Borers Bit Extensions
Electricians' Bits

Let us send Complete Information.

GREENLEE TOOL CO.
1707 Columbia Ave.
ROCKFORD, ILLINOIS

GREENLEE TOOL CO., 1707 Columbia Ave. Rockford, Illinois
Please send complete information on:
☐ Knockout Tools ☐ Conduit Benders

Name _____
Street _____
City _____
State _____
My Jobber is _____ ES-6-38

well equipped kitchen, etc. There are dozens of these underlying motives that cause us to react to suggestions in the way in which we do.

If we wish to keep the interest of the reader of our advertisement beyond the first attention which he will give to our message, we appeal to one or as many of these underlying instincts as we can. For instance, the newly married couple will always be interested in anything in home equipment—either because they are building for the future or because each will want the other to be as happy and comfortable as possible, or because they want to have as fine a home as "the Jones."

Parents will listen when you talk about anything for the good of their children. The young man is interested in anything which will make him seem more important to the right young lady, and she will be intrigued by anything which will make her seem more lovely and desirable.

The curiosity instinct is widely used in advertising, by withholding something or just hinting at it. The something for nothing instinct is apparent in the type of sales message which offers something extra or free—an extra length of cord with an electric iron—a book of famous radio stars with a radio, etc.

The desire to keep up with the family next door is one of the strongest motivating factors in making a sales appeal in your advertisement. "Your neighbor's family enjoys one," "It's part of the equipment of every well furnished home," "Your Friends Will Admire Your Good Taste," are examples.

Making the Advertisement Easy To Read

Three things contribute towards making the advertisement inviting to the eye of the reader. One is the proper use of type. Another the employment of short sentences, short paragraphs and short words carefully selected to build mental pictures. The third factor lies in the arrangement of headlines, subheadlines and illustrations.

In all advertising a contrast in types is desirable. Large types should be used to attract attention and smaller type for the reading parts of the advertisement. Emphasis can be given by using special type faces or by black faced type. Some sentences or paragraphs can be made to stand out through using another style of type. A study of this subject involves too much for the ordinary business man to concern himself with, but his local printer or newspaperman will be glad to assist in the selection of type faces that make the advertisement distinctive and easy to read.

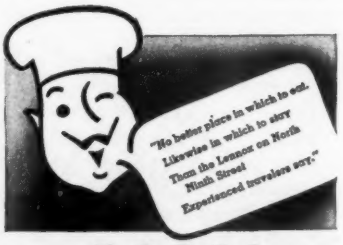
It is difficult for people to keep their interest sustained for any considerable length of time. So it is well to break up the advertising message into small parts.

This can be done by making many small paragraphs, by placing subheads above certain parts of the advertisement, making them each definite sales messages in themselves.

All well arranged advertisements are prepared for easy eye movement. In other words, there are certain attention getters in your advertisement to which the eye of the reader is attracted first. These represent the focal points for your advertisement and the reader's eye

Fine food, comfortable smartly appointed rooms, friendly service. And yet over 50% of all rooms for $3.50 or less single; $5.00 or less double.

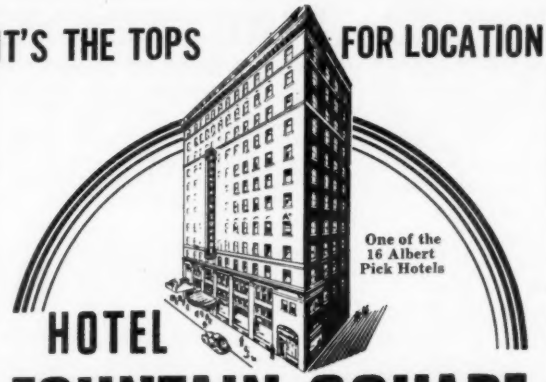
hotel Mayfair
ST. LOUIS


"No better place in which to eat. Likewise in which to stay Than the Lennox on North Ninth Street. Experienced travelers say."

HOTEL Lennox
SAINT LOUIS

OVER 50% OF ALL ROOMS $3.50 OR LESS, SINGLE; $5.00 OR LESS, DOUBLE

IT'S THE TOPS FOR LOCATION



One of the 16 Albert Pick Hotels

HOTEL

FOUNTAIN SQUARE

250 MODERN OUTSIDE ROOMS WITH BATH FROM $2.50

You will be right there—when you register at the Fountain Square Hotel. Facing all "fronts" in Cincinnati—center of the shopping district and office building area. The food and service are the best to be had in Southern Ohio. In the air-cooled Moorish Grill you'll meet the leading men of Cincinnati, while the Olympic Cafe and Bar (also air-cooled) is Cincinnati's scintillating center of night life. The rooms are exceptionally pleasant...all have full tiled baths.

M. J. DEININGER, Manager

CINCINNATI

HERE'S YOUR HOTEL in Cleveland

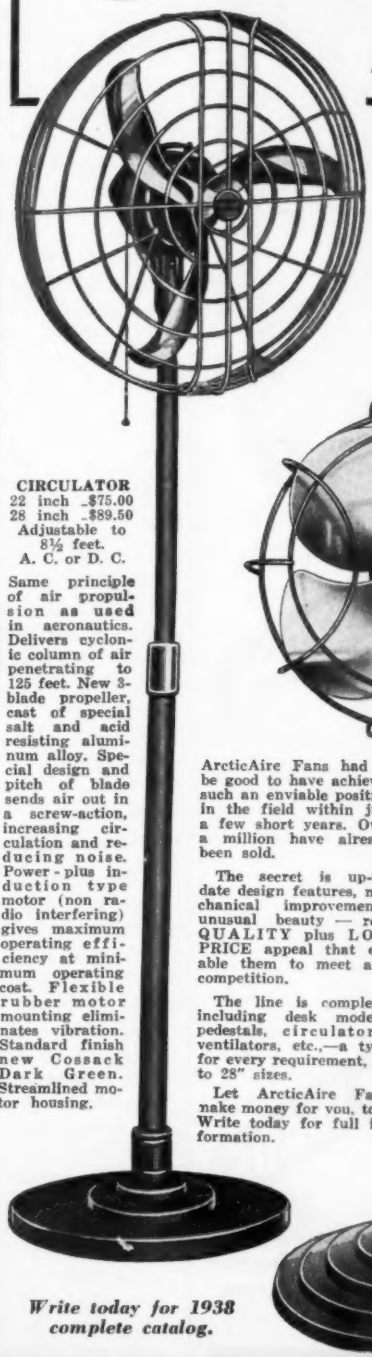
There's a big, outside room—with private bath and circulating ice water—set aside for you. You'll like the delicious meals served in our four restaurants. You're right in the center of things, too. The leading stores, theatres, office buildings, and Union Depot, are all located within a five block radius of the Carter.

RATES
Single: $2.75 to $6.00
Double: $4.00 to $8.00
600 ROOMS

HOTEL CARTER
CLEVELAND
Affiliated with American Hotels Corporation • J. Leslie Kincaid, President

ArcticAire FANS

Over A MILLION Now in Use



CIRCULATOR
22 inch ..$75.00
28 inch ..$89.50
Adjustable to 8½ feet.
A. C. or D. C.

Same principle of air propulsion as used in aeronautics. Delivers cyclonic column of air penetrating to 125 feet. New 3-blade propeller, cast of special salt and acid resisting aluminum alloy. Special design and pitch of blade sends air out in a screw-action, increasing circulation and reducing noise. Power-plus induction type motor (non radio interfering) gives maximum operating efficiency at minimum operating cost. Flexible rubber motor mounting eliminates vibration. Standard finish new Cossack Dark Green. Streamlined motor housing.

ArcticAire Fans had to be good to have achieved such an enviable position in the field within just a few short years. Over a million have already been sold.

The secret is up-to-date design features, mechanical improvements, unusual beauty — real QUALITY plus LOW PRICE appeal that enable them to meet any competition.

The line is complete, including desk models, pedestals, circulators, ventilators, etc.,—a type for every requirement, 8" to 28" sizes.

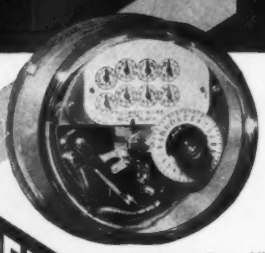
Let ArcticAire Fans make money for you, too. Write today for full information.

PEDESTAL
12 inch, 3 speed Oscillator $31.95
16 inch, 3 speed Oscillator $39.95
19 inch, 3 speed Non-Oscillator $39.95
Adjustable 4 to 7 feet.
Definitely designed and built for use in Homes, Private Offices, Reception Rooms, Hairdressing Booths and in the Kitchen. Pedestals modernly designed and attractively finished in dark green. Low position permits fan to be placed in front of window to move air in or out of room. Oscillating mechanism entirely enclosed in streamlined motor housing.

Write today for 1938 complete catalog.

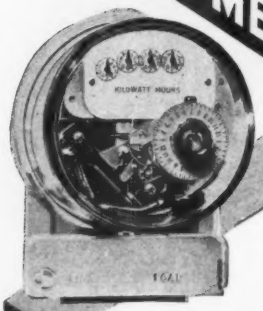
F. A. Smith Manufacturing Company
ROCHESTER, NEW YORK

METER
and
CONTROL
Off-peak Loads
with



MODERN METERS

Sangamo Type HV-S-2
Two-rate Meter, Socket
Mounting



Sangamo Type HV-A
Meter and Time-Switch
In "A" Base

for MODERN LOADS

A complete line of
Sangamo Combination Meters and
Time-Switches is available fulfilling the
requirements of any off-peak rate.

SANGAMO
ELECTRIC
COMPANY
SPRINGFIELD, ILLINOIS

should be led easily from that point to the matter of related importance.

All this sounds rather difficult and technical but really it is not. It is quite likely that the headline or the main illustration will be the thing that stops the eye of the reader. Put that where he will see it first. Immediately above the center is a good place, or across the top, or on the left hand side at the top. The eye's natural, free and involuntary movement is from left to right and downward. Considering this, the copy or illustration which immediately follows the attention getter in your advertisement should carry the interest of the reader on to the next point.

One thing we all must avoid in writing advertising is the use of ponderous, academic or complex words and phrases. "Be natural" is the best advice that can be offered and if you find in writing you are apt to become stiff and stilted, write it as you would ordinarily, then go over each word and try to find the one that is more natural. Check it this way. Does each noun and adjective describe? Does each verb suggest action? If they do you'll have a powerful advertisement. It is best to break up your story into short sentences and short phrases. A sentence with more than fifteen words can not be readily followed by the average reader.

Getting the Reader to Act

Whatever appeal is made, whatever the size or style of the advertisement, there is one object to be kept in mind—and that is to get *action* on the part of the reader. It may be merely to influence his good will, or to sell him certain merchandise. It might be to make him sure to remember your store whenever electrical merchandise or service is required. Whatever it is, the big job your advertisement must do is to get results.

Make your advertisement attract favorable attention, make it hold the attention until the reader has your story, then make it persuasive enough to have the reader call at your store. Get his confidence with well chosen sincere statements. If in addition you can offer some "hook" to your sales appeal it will make it that much stronger and more certain. Special price offers —limited time offers—reasons why it is to the advantage of the reader to buy now—all will increase the number of direct results.

Your advertising can be a powerful asset to your business. It can create sales, hold your present customers, and attract new ones. It establishes your standing in the community. It is your best contact with the people you would like to have as customers.

Cooperative Merchandising—The Utility Viewpoint . . .

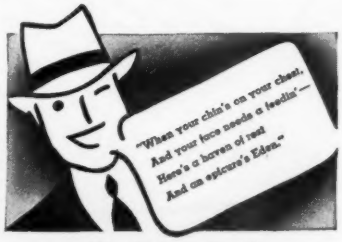
(*Continued from page* 9)

three-year period under review the combined merchandise sales of company and dealers increased 249%. By the same token, the cost of securing each dollar of new domestic revenue has shown a steady decline during the three-year period, that of 1937 being 43% less than that of 1936.

These results have been secured through aggressive promotional selling on the part of the utility, active merchandise participation on the part of the dealers, backed up by adequate advertising, planned sales promotion, massed man pow-

or to live, comfortably yet economically. Over 50% of all rooms for $3.50 or less single; $5.00 or less double.

hotel Mayfair ST. LOUIS



HOTEL
Lennox
SAINT LOUIS

OVER 50% OF ALL ROOMS $3.50 OR LESS. SINGLE: $5.00 OR LESS. DOUBLE

Master-Light Type "T"

Mounts On Repair Car Roof

"Just Point The Pistol Handle"

A Rugged Searchlight for Trucks and Repair Cars. Finished in black enamel and chromium plate.

ONLY SPOTLIGHT MADE ESPECIALLY FOR PUBLIC UTILITIES

Write today for information regarding complete line of Master-Lights.

CARPENTER MFG. CO.

179 Sidney St., Cambridge, Massachusetts

MAKERS OF WORLD'S ONLY COMPLETE LINE OF HIGH POWER HAND SEARCHLIGHTS

EVERSTICK ANCHORS!

New nut housing. Locks Anchor firmly on rod. Rod cannot slip thru Anchor when being installed.

Engineers appreciate Everstick features which assure safety, long life and ease of installation in any soil condition.

A complete line with 3 types of expanding Anchors and rigid types of Cone Anchors. All sizes and holding capacities. Write for Everstick literature including new folder on Rural Electrification Lines.

THE EVERSTICK ANCHOR CO. FAIRFIELD, IOWA

C. B. ROGERS

ELECTRICAL HEATING ENGINEER
CHROMALOX
ELECTRICAL HEATING UNITS
and
CHROMALOX
EQUIPPED PRODUCTS

1000 PEACHTREE STREET
ATLANTA, GEORGIA

TIME SWITCHES $4.95 and up

With capacities from 5 to 400 Amperes

FLASHERS $6.50 and up

All Types and Arrangements of Circuits for Every Effect.

For Detailed Information, Write

Automatic Elec. Mfg. Co.

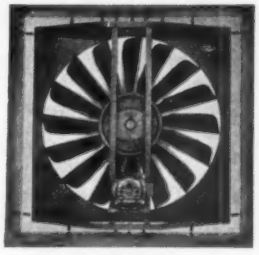
MANKATO, MINN.

. . . you can

BOOST Your Summer Profits With COOLAIR

Join up now with the hundreds of smart dealers and contractors who are fattening their pocketbooks with big profits from Coolair sales and installations.

Scorching summer days are here again and owners of homes, stores, restaurants and apartment houses are ready-to-buy prospects for quiet, inexpensive Coolair fans. With patented spring suspension, low operating cost, easy installation and tremendous air delivery, the Coolair fan practically sells itself. The vast home-cooling market alone will bring you rich rewards this summer if you go into action now.



Start selling Coolair today and get the extra profits that are waiting for you. Delay is costing you money. Act now!

WRITE FOR FREE ILLUSTRATED MANUAL

Coolair TRADE MARK

Pocket-size, 28-page booklet crammed with important facts about home cooling. See why Coolair leads the field. Mail this coupon today.

Please Send Me Your Coolair Manual.

Name _____

Address _____

_____

Coolair Ventilating and Cooling Systems

AMERICAN COOLAIR CORPORATION

Manufacturers . . . . JACKSONVILLE, FLORIDA

er, and the help of a greatly increased number of manufacturers and distributors. Furthermore, these results were attained without resorting to cash concessions or sales subsidies of any kind, such as installation cost of major appliances, financing or servicing of major appliances, or bonuses paid dealers and dealer salesmen.

Although the tangible benefits realized have been more than sufficient to justify the adoption of a sound dealer-utility cooperation program, it would be amiss were recognition not given to a most important intangible benefit which is highly prized by all public utilities. I speak of good public relations.

The far-reaching effect of a sound dealer program can scarcely be evaluated in momentary terms, since good public relations cannot be bought at any price. I feel safe in saying that this by-product of dealer-utility cooperation is more lasting and, hence, worth more than the results secured by an equal expenditure directed solely toward creating good public relations.

Need I remind you that equitable dealings with hundreds of merchants not only enlists their dynamic good will, but also that of their families, their friends, and their employees. This may be likened unto the pebble cast into the water, causing ripples to be radiated in every direction and in ever-widening circles. And, so the circle of favorable influence of a successful dealer policy will eventually encompass the vast majority of your customers.

I firmly believe that the utility should continue to carry on sound merchandising, since past experience proves that the total overall sales of utilization equipment are greater if the utility merchandises appliances, especially those which are in the embryonic stage of public acceptance, and simultaneously carries on comprehensive planned efforts to organize and promote mass merchandise selling in cooperation with all sales allies. However, it should be noted definitely that utility merchandising is distinctly incidental to the selling of liberal use, fair value and other benefits of all electric service.

Regardless of the plan in use by the utilities, I am sure that each one of us keenly feels the need of mass man power, and recognizes its importance in selling increased use. Furthermore, this mass man power can be made available at minimum expense to every utility which sponsors a sound cooperative dealer selling program have on the equilateral hypothesis of "Mutual interests for mutual profits."

There are ten important steps involved in the adoption of such a program:

1. The utility should continue to merchandise aggressively and specifically those appliances still in the development stage or those having no other adequate outlets, such merchandising to be in coordination with equally aggressive selling by electrical dealers.

2. The adoption of a dealer-utility program should, when announced, be presented with every detail of the plan thoroughly explained to all sales allies.

3. It should be made clear that the program will remain in effect only so long as the dealers take full advantage of the opportunity to merchandise aggressively.

4. All forms of utility advertising and sales promotion materials should be void of product mention, stress being placed upon (a) the advantages of modern electric service, (b) the diversified uses for electric service, and (c) the cheapness of using electric service.

5. The utility compensation plan should be so designed as to foster rather than retard close cooperation between sales forces of utility and dealer.

6. Policies covering the servicing of appliances should be established so as to avoid any form of discrimination against any dealer, distributor, or manufacturer.

7. The services of the home service department should be made available to dealers in the same measure that it is available to the utility itself.

8. Dealers should be given adequate advertising selling support, using such phrases as "Visit your Electrical Dealer," and should be made fully acquainted with national selling movements and promotions.

9. One or more utility employees should be assigned the full-time responsibility of (a) making periodic personal visits to dealers, augmented by occasional dealer group meetings, (b) rendering assistance to the training of dealer salesmen, and (c) familiarizing dealers and their salesmen with the utility's rates.

10. Dealer-utility cooperation is a give and take proposition. Your cooperating dealer cannot prosper on lip service predicated on promises alone but he can prosper on sincere service founded on the precept of the golden rule.

These ten points are essential to the practical dealer program. They cover the fundamental requirements of a plan that offers a sound solution to the problem of more man power for increased kilowatt hour sales; a plan promised on integrity and sincerity of purpose; a plan founded on facts; a plan conducted for dealer-utility common good — *mutual interests for mutual profits.*

Crapo
GALVANIZED PRODUCTS

Steel Strand

Standard
Siemens-Martin
High Strength
Extra High Strength

▼ ▼

Telephone and Telegraph Wire

Extra Best Best (EBB
Best Best (BB)
Steel

Crapo Galvanized Products combine *every* element essential to long life and low maintenance cost: pure zinc coatings, *non-cracking, non-peeling*—correct tensile values—proper ductility.

Indiana Steel & Wire Co.
Muncie, Indiana

DISTRIBUTORS WANTED

Illinois corporation, established 40 years, desires reliable distributor to sell our Patented Jewel Electric Specialties. Send 10c for Photo Print Proposition and Catalog. Jewel Co., Dept. ES-9, 4311 Ravenswood Ave., Chicago, Ill.

HERE'S A REAL SIDELINE all your customers need. New, noncompetitive, every demonstration a sale. Sells itself. Samples inexpensive, readily carried. Big easy profits. Write now. Dept 2, 2626 Washington Blvd., Chicago.

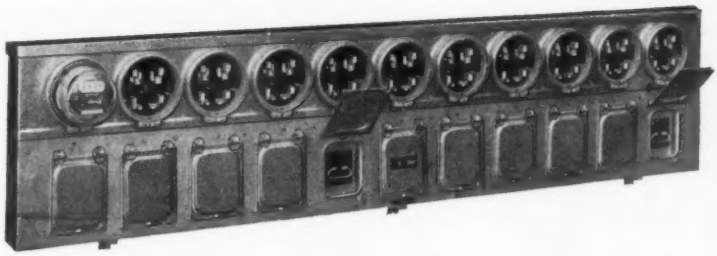
• SUPER-CONVENIENCE

• Economy
• Durability

Shown at the right is only one of the many new designs in meter cabinets developed by Walker engineers to anticipate your needs in the field of gang metering.

This 11-gang cabinet for socket type meters is completely weatherproof, combining all the features of best meter engineering practice.

Other arrangements to suit space requirements are shown in our catalogue. Write for your copy today.



WALKER ELECTRICAL CO.
Atlanta, Georgia

Do You Know?

The proper method of making connections for a polarity test on a three-phase delta connected stator? How to lay out armature windings of the split-loop type? The theory of operation and the many types of circuits utilized in capacitor-type split phase motors? Methods of reversing rotation of a-c and d-c motors? How to eliminate brush troubles? Select the best type of varnish?

The answers to these and many other practical problems on motor repair will be found in Jack Beater's new book

"MOTOR REWINDING and TESTING"

ALL PHASES of motor rewinding, repair and testing are discussed in this new publication from the practical man's point of view. The author, an experienced motor rewinder himself, has the knack of explaining difficult principles and methods in simple, non-technical language.

Although this book was prepared primarily for the beginner in motor rewinding work, it contains a great deal of practical information that will be found of value even to the "old timers" in the trade. A special feature of the book is the section devoted to the design of tools and equipment useful to the motor rewinding shop.

A glance at these chapter headings demonstrates the scope of this valuable book: Practical Motor Tester Panel, Handy Tools for the Motor Shop, Time Saving Coil Winder, Armature Testing, Testing Stators, Classification of Motors, Split Loop Windings, Loop Windings, Fan Motors, Automotive Armatures, Rewinding Small Polyphase Motors, Capacitor Motors, Brush Troubles and Their Remedies, Insulating Varnishes for Electrical Work.

SPECIAL OFFER—"Motor Rewinding and Testing" may be obtained with a 3-year subscription to ELECTRICAL SOUTH for $2.50 or a 5-year subscription for $3.50. Take advantage of this special offer while it lasts. Write today to

ELECTRICAL SOUTH, GRANT BLDG., ATLANTA, GA.

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